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GLEANINGS

IN BEE CULTURE

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THE A. I.
MEDINA



ROOT CO.
OHIO

U.S.A.

Western Edition

ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER

Root's Bee-keepers' Supplies at Convenient Distributing Points.

Well-known Dealers.

The dealers, whose names follow, are well known to bee-keepers. They have been, for the most part, long established in the bee-supply trade, and have a knowledge of the business most valuable indeed to the bee-keeping fraternity. Their advice may be had on any question of supplies, etc., for the asking.

The Large Stocks.

Nowhere else is it possible to find such well-assorted stocks of goods for bee-keepers as are carried by dealers in Root's Goods. No matter whether you require a little five-cent article or a carload of goods, these dealers can serve you promptly. Stocks are frequently carried amounting to \$5000 and upward.

Shipping Points.

You will observe that these dealers have excellent shipping facilities—guaranteeing you quick delivery and low freight rates.

Medina Prices.

The prices, terms, discounts, etc., are identical with the home office at Medina (with rare exceptions). Full particulars may be had before ordering, if desired, by writing the dealer nearest you. You can, however, use our Medina catalog and terms, and, if any variation, your dealer will advise you, if requested, before shipping.

Other Dealers.

Besides the following list, there are many others who handle some of Root's Goods. The following is by no means complete for hundreds of dealers come to us for many of the goods of which we are the exclusive manufacturers. *Insist on getting Root's Goods.*

Local Dealers.

In addition to the following list who carry large stocks, and furnish at both *wholesale* and *retail*, we have in every State a large number of dealers who handle our goods exclusively. As there are over 500 of these dealers, space will not permit giving their names at this time; but information will be given by us, on request, to any bee-keeper regarding the dealer nearest him handling Root's Goods.

Colorado--Fruita Fruit & Produce Association, Fruita, Colo.

District of Columbia--The A. I. Root Company, Washington, D. C.

Georgia--Howkins & Rush, 124 Liberty St., Savannah, Ga.

Indiana--Walter S. Pouder, Indianapolis, Ind. Vickery Bros., Evansville, Ind.

Iowa--Joseph Nysewander, Des Moines, Iowa.

Illinois--The A. I. Root Company, 144 E. Erie St., Chicago, Ill.

Kansas--Carl F. Buck, Augusta, Butler Co., Kan.

Mississippi--George A. Hummer, Brazelia, Miss.

Massachusetts--F. H. Farmer, 182 Friend St., Boston, Mass. W. W. Cary & Son, Lyonsville, Mass.

Maine--The A. I. Root Company, Mechanic Falls, Me.

Maryland--Rawlings Implement Co., Baltimore, Md.

Michigan--M. H. Hunt & Son, Bell Branch, Mich. George E. Hilton, Fremont, Mich.

Minnesota--The A. I. Root Company, 1024 Mississippi St., St. Paul, Minn.

Missouri--John Nebel & Son, High Hill, Mo. Springfield Seed Co., Springfield, Mo. Blanke & Hauk, St. Louis, Mo.

New Mexico--Edward Scoggin, Carlsbad, New Mex.

New York--The A. I. Root Company, Syracuse, N. Y. The A. I. Root Company, 44 Vesey St., New York City, N. Y.

Ohio--McAdams Seed Company, Columbus Grove, O. Griggs Bros., 521 Monroe St., Toledo, O. C. H. W. Weber, 2146 Central Ave., Cincinnati, O.

Pennsylvania--Prothero & Arnold, Dubois, Pa. The A. I. Root Company, 10 Vine St., Philadelphia, Pa.

Texas--Texas Seed & Floral Co., Dallas, Tex. Udo Toepperwein San Antonio, Tex.

The following buy our goods in carload lots but supplement them with local-made goods.

Alabama--J. M. Jenkins, Wetumpka, Ala.
California--Calif. Nat'l Honey-producers' Ass'n, Los Angeles; Madary Planing Mill, Fresno, Cal.

Colorado--The L. A. Watkins Mds. Co., Denver, Col.
Oregon--Portland Seed Co., Portland, Ore.
Texas--D. M. Edwards, Uvalde, Tex.

The A. I. Root Company, : Medina, Ohio.

GLEANINGS

A JOURNAL DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS

BEES CULTURE

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SEPT. 15, 1905.

No. 18



I WANT TO ASK my friends to waste no votes on me for director of National, as, under no circumstances, am I to be considered a candidate for re-election. [But a lot of us will vote for you just the same. There are a few old officers that should be retained, and you are one of them.—ED.]

NO REPLY is given to J. W. Stoutzenberg, p. 919, as to whether he should transfer now or next year. Wouldn't he do better to wait till next spring? or, still better, until three weeks after the bees have swarmed? There is probably three times as much transferring done in England as here—may be ten times as much; and nowadays the *British Bee Journal* advises to let the bees swarm first.

BROTHER MCCAIN has brought out a good idea, p. 919. When using greasy waste I've always been careful *not* to get my fingers daubed with it—don't like the smell. Then I'd smear my fingers with butter to get off the glue—must try the plan of going to the hive with "butter-fingers" prepared in advance. [At this time of year propolis is apt to be abundant and very sticky. It is a good suggestion to grease the fingers before commencing work among the bees.—ED.]

MR. DOOLITTLE, page 917, says nothing about the crock-and-plate feeder for those who have no regular feeders. I wonder if the milkpan-and-grass plan is really better. At any rate, that *green-grass* idea is good. [We are in the habit of recommending to those who have no feeder a common tin pan. Pour in water and syrup, equal proportions, and stir it till it is dissolved. Over this is to be placed, directly in contact with the syrup, a piece of wet cheese-cloth. This will float; and when the syrup is taken up, the cloth will remain in the bottom, sucked dry.

Where there is a super or upper story on the hive there is hardly any feeder that is better.—ED.]

IN UNITING by setting one colony over the other, O. S. Rexford is told, page 919, that "the moved lot will give back many of its old bees to the old stand." Didn't you forget when you said that, Mr. Editor, that the moved lot has been imprisoned three days, according to Mr. Rexford? But I would strongly advise the unqueening of the moved lot. [You are right. I had overlooked the fact of a three-day confinement, and I therefore withdraw my objection.—ED.]

I'M AFRAID, Bro. A. I. Root, that some may take it, from what is said on page 921, that the conversion of a child is of less consequence than that of a grown person. I've known at least one minister to hold that view, but I hardly think you do. If John Smith is a better man for his conversion at 40, he should be a still better man if he had begun a Christian life at 20, and I don't know by what rule he should not be a still better man if he had begun at 10. Do you? The longer one works at bee-keeping the better bee-keeper he should be; and it surely ought to be true that, the longer one works at being a Christian, the better Christian he ought to be.

AFTER READING the new book, "How to Keep Bees," by Anna Botsford Comstock, I agree with Editor Hutchinson that it smacks of being written by one who had read up for it rather than by one who had got her knowledge from the bees themselves. Certainly any one who should rank it as the best book for a beginner, or for one who intends to keep only a few colonies, can hardly be as familiar as he ought to be with the contents of Root's A B C. [While the book may not be technically correct, yet it is a very nice addition to our bee-lore. Lack of technical accuracy would apply to several bee-books, but which, nevertheless, have very much merit.—ED.]

A PERFECT FEEDER for outdoors is called for, p. 906. There is none, except the flow-ers. Here's what I've tried, and if you're willing to take the trouble it works well:

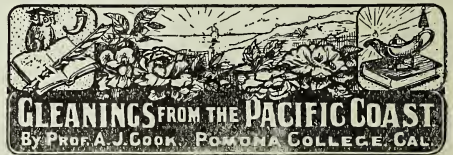
Take a lot of brood-combs and spread them out flat where the sun can't melt them. Then spray them with feed. With combs enough, you can spray often enough, lightly enough, and with syrup thin enough, so the bees will gather no faster than on the flowers. [The plan you speak of will help to eliminate largely the scramble, providing the syrup is made weak enough. On the strength of the syrup hinges the whole thing. I think our plan now is a little better in that the bees are compelled to take many down-and-up flights before they can get a full load. For further particulars see editorial department. —ED.]

THAT LOT of schoolteachers, p. 914, looks as if you were doing something to bring this country up where Europe is in that respect, especially Germany. There a much larger proportion than here of the leading bee-keepers are teachers and preachers. Editors of bee-papers are mostly from those two classes. I've spent some time studying the faces of those Buckeye schoolteachers, and it promises much for the next generation to have their training in such good hands. Especially it does one good to see such clean-looking faces among the young men. I am sure some of those faces can't very well belong to a young man who isn't *clean inside*. [The A. I. Root Co. is making a strong effort to interest schoolteachers in bees; and now that nature-study is getting to be a regular department of instruction, it is much easier to wedge in the particular subject of bees. —ED.]

COLONIES in frame hives with combs built crosswise, we are told, page 919, "are practically as though they were in box hives, because the combs are immovable." True; but in many cases, at least part of the combs can be got apart in this way: With a hand-saw, saw down at each side of the hive, so as to sever the connections of the combs with the side walls. Now turn the hive upside down. If necessary, push down a little on the frames to start them out of the hive, then lift the hive off. That gives you a chance to separate the frames at any point where such separation is possible; and often by a little cutting you can free a comb so it can be shoved back entirely into its own frame. Indeed, sometimes, if the case is not a very bad one, all the frames can thus be got into place; whereas, in the first place not a single frame could be lifted out. [Your plan would be perfectly feasible with some hives of crosswise combs; but if one wishes to avoid a messy job the Heddon short plan would be preferable. —ED.]

SPEAKING of two nuclei wintering in one hive, Mr. Editor, p. 902, you say, "Perhaps this remaining queen would have to be 'introduced' to prevent the motherless bees or those lately made motherless from attacking the new mother." I hardly think there would be trouble on that score. One of my greatest troubles with these double hives was to keep the bees from uniting. If there was a spot under or over the divi-

sion-board where a single bee could get through, that invariably meant the peaceful uniting of the two sides if one was queenless, and I had a number of such cases. If you are thinking of wintering two or three nuclei in one hive, it may be of interest for you to read in Forty Years among the Bees, pages 285—291, also 244—246. If you want to have three nuclei in a hive, let me emphasize the point that the middle space must be not less than 2½ inches. For successful wintering, that middle compartment should be crowded with bees. Years ago I used successfully ten-frame hives with six compartments of 2½ inches each, and I see no reason why these might not winter well if crowded with bees. [We expect to test this method this winter in our bee-cellar. We are preparing to put some of our larger baby nuclei in also. Even if they should die the loss would be merely nominal, in bees at least. —ED.]



CARNEGIE RESEARCH FUND.

Among the many beneficiaries from the munificent gifts of Mr. Andrew Carnegie, few, if any, will work more real benefit than that granted for the promotion of research. A large endowment has been created which is to be permanent, and the entire proceeds of this are given into the hands of an able committee — men whose great ability and philanthropic hearts have been already proved by lives of rich endeavor and lofty purpose, and these men are to decide who shall spend this money, and where and in what lines it shall be expended. The fact that some thousands have been appropriated that Luther Burbank, the great plant-breeder of California, may give his entire time, patience, and energy to the grand work which has already blessed the world in such manifold ways and directions, shows clearly that this committee are very wise in their administration of the great trust handed over to them, and makes it equally patent that they have no prejudice against work along practical directions.

The other day I was looking through the hives of bees with Dr. Phillips, of the Department of Agriculture, and saw how wisely he had commenced with his various queens, like the fine large shining black Caucasian. These bees are so quiet that, though the weather was rainy, and provocative of idleness, and ill temper was with the bees, and though we used no smoke, and were rude and rough in our handling, even pinching the bees, we yet aroused no anger or resentment. Then I learned that he had planned

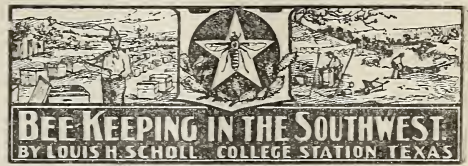
work that would require years to complete, and work that would almost surely benefit greatly, not only our own bee-keepers but the bee-keepers of the whole world — work that almost surely, if carried to completion, would result in giving us improved bees. I bethought me at once that here was a most excellent place to put a considerable sum of this Carnegie research fund. The work will take years, and should be continued by one person. The one in charge should have high scientific instincts, culture, and enthusiasm. The work has great promise. From past action on the part of the committee in charge we may believe that this work with bees will surely appeal to them. I feel sure that, if our wideawake editor of GLEANINGS, acting in conjunction with Dr. Phillips, at once makes a movement in this matter, backed as he may and will be by the two powerful national organizations, and aided, as he should be, by letters from individual bee-keepers of every State, and, so far as is possible, from every county in the United States, written to the committee, we may almost surely count on certain success. I have written to two other papers whose editors will push their readers to action. I hope GLEANINGS will act at once. I believe here is a golden opportunity to do a most valuable and lasting service to our art. Through Dr. Phillips, give us the names of this committee, and then suggest, surely I need not say urge, the afore-mentioned societies, and bee-keepers everywhere, to aid in persuading the committee to make the needed appropriation. Surely if we do not succeed it will be because of lethargy or inaction among those who should be tremendously interested in this matter—the bee-keepers themselves. We may rest assured that GLEANINGS, true to all her history, will rise to the occasion and stretch to her full height.



A TACHINA FLY.

The supposed "bee" from Mr. D. La Berge, St. Louis, Mo., is a tachina fly, and, of course, belongs to quite another order than the bees. It has but two wings, like the common house-fly and mosquito. It belongs to the order *Diptera*, instead of *Hymenoptera*. It not only lacks one pair of wings but has quite a different mouth. Flies can only sip or suck; bees, wasps, etc., can both sip and bite. This is why we see flies about flowers. They are, like the bees, there for the nectar. These flies, then, help bees in the great work of pollinating flowers. The fact that flies keep company with bees in visiting flowers causes them to mimic bees, so that this is not an exceptional case of a fly being mistaken for a bee. In my next I will explain this mimicry, and give some very striking cases. These tachina flies are our decided friends. They are parasitic, laying their eggs on other insects. The maggots which hatch from these eggs penetrate the insect, which is thus victimized, and soon devitalize it, as they destroy its entire viscera. Thus the army-worms of

California, which, in occasional years, as in 1895, do terrible damage in the gardens and alfalfa-fields, are cut short by these valuable tachina flies.



THE GREAT SOUTHWEST, KNOWN AS THE
BEST BEE-KEEPING, STOCK-RAISING,
FRUIT AND TRUCK GROWING, AND
GENERAL FARMING SECTION
OF TEXAS.

Southwest Texas is one of the best sections of the Lone-star State where a man with brains and brawn can make an honest living. It is the bee-keeping part of Texas, and is known as such far and wide throughout the United States. Some of the largest bee-keepers are located here. For the diversificationist, those who wish to raise other things in connection with the product of the bee-hive, Southwest Texas offers a good opportunity as well as the specialist in apiculture.

Southwest Texas is situated in the famous coast country of the Gulf of Mexico. The climate is delightful and healthful.

BEE-KEEPING IN SOUTHWEST TEXAS.

Southwest Texas is a wonderful bee country. It is mostly of an arid nature. The growth covering it is mostly shrublike, with not many large trees, except along the rivers and lowlands. Strange as it may seem, nearly all of these shrubs are honey-yielders, and some of them—guajilla, catsclaw, mesquite, whitebrush, and some others—rank among the most valuable honey-producing plants. Besides these there are many smaller weeds and flowers of importance. A peculiarity is that these yield better during a very dry season than a moist one. "The dryer the season the better the honey crop," say the bee-men of this section. These shrubs take up moisture the previous fall and winter, and store up sap upon which they thrive the next season so that rains during the honey season are only detrimental. Another peculiarity is that, when the flow has once begun, swarming ceases, and the whole energy of the bees is bent toward storing honey.

There are many fine locations in many of the counties of Southwest Texas that are not occupied. Some can still be found along the railroads; but the best are further inward. Some of our largest bee-keepers are running "strings of apiaries" in such localities, and freight their crop to the nearest shipping-point by wagon with profit. With the coming of railroads new territory will be opened for the location of apiaries. This country is a good one for the diversifi-

cationist. Some of the following will interest those who are wishing for information about the country—bee-keepers and others.

POULTRY-RAISING.

This goes well with bee-keeping. Poultry of all kinds thrives here, and, like hogs, it is free from disease and epidemics in this country, while the feed crops for poultry and live stock are numerous and cheaply raised. The natural feeds on the ranges are unexcelled. The egg crop is good, and poultry has been shipped by the thousands. The day is not far off when much more will be shipped, both live and dressed.

HOG-RAISING.

Hog-raising has been neglected to some extent; but of late stockmen and farmers have engaged in it more largely, and made good returns. The country is fine in natural feeds of the range, as well as all kinds of cultivated feed crops for hogs. The hog pasture with fence of wire netting, or of

eight or ten barbed wires, is becoming more and more common.

SHEEP AND GOATS.

In early days hundreds and thousands of sheep and goats grazed on the broad prairies of this section; but during the last twenty years they have drifted west and north-west to the hills and mountain ranges. While these ranges and mountain streams were undoubtedly strong inducements to flock-masters, yet these small animals are still to be found on all well-regulated ranches, farms, and stock-farms. Many pastures are carrying their full complement of cattle and a full stock of goats and sheep.

HORSES AND MULES.

Breeding of fine horses and mules has been engaged in by a few stockmen and farmers on a moderate scale, but with most gratifying results, especially during the last few years, while the prices have been so high. The United States government pur-



Texas divided into North, Central, East, West, and Southwest Texas. The shaded portion is the famous bee country.

chased thousands of head of horses in this section during the war with Spain, for use in Cuba, Porto Rico, and the Philippines, because it was found that our stock was the best adapted and most serviceable in the armies in those countries. For the same reason the British government bought hundreds of thousands of Texas horses and mules for use in its armies in the Boer war in South Africa. Such indorsement from these great governments is quite valuable. It is said that Kentucky and Missouri have no advantages over this section in breeding and marketing this class of stock.

CATTLE-RAISING.

As a cattle-raising and stock-farming region Southwest Texas has always ranked at the head of the list. About 80 per cent of this country is occupied by cattle-pastures, and about 20 per cent by cultivated fields, truck-farms, etc. Here is where the Texas long-horn steer used to reign supreme. As a rule now, pastures are stocked with high-grade cattle, while many use only registered cattle or pure breeds. All the better class of ranches use registered or pure-bred bulls exclusively, claiming that it does not pay to waste money and grass on scrub stock of any kind. Quite a number of our stockmen breed registered cattle for the local market, and sell them at fancy prices to pasture-men who are grading up their herds. The great majority of the pastures, however, grow and finish beeves for local and northern markets, the majority of the pastures marketing only grass-fed beef, while some of the most successful and most prosperous stock-farmers sell only prime beef fed to a finish with native grasses supplemented with cotton-seed meal and hulls, buffalo hay, prairie hay, sorghum ensilage and sorghum hay; corn, pumpkins. Spanish peanuts, pie melons, cassava, Kafir corn, millet, Hungarian grass, cow peas, etc. Beeves from this country are as highly prized in the Chicago market as the choicest from Iowa, Illinois, and Missouri.

DAIRY AND CREAMERY BUSINESS.

This is another that will go well in connection with bee-keeping. Every properly and well regulated farm in the country has a milk and butter department. Some of our best-fixed farmers have risen to prosperity by the aid of a few first-class Jersey cows properly fed and milked, and the surplus butter is sold on the local market, either on the open market or to regular customers under annual contracts. The farmer who sells butter seldom comes to town without something to sell, generally enough to pay for his purchases, leaving him a cash balance. A few American farmers pay current expenses of the farm and the family with the returns from sales of butter, poultry, eggs, vegetables, and fruits. Nearly all the German, Bohemian, and Norwegian families pursue that plan and save the proceeds of broom-corn, cotton, and other money crops. Quite a number of our farmers have bought cream-separators, and are shipping their cream to

creameries. This new industry is destined to become an important one in the near future, as well as permanent. There is a variety of cheap feed here. The dairy or creamery herd is an excellent adjunct to the truck-farm, stock-farm, hog-ranch, or any department of agricultural operations.



It is a good indication for bee-keepers when the great dailies publish so much in regard to bees, especially when the information emanates from some reliable bee-keeper. These articles are appearing here and there with commendable regularity, and are doing much to educate the public in the right direction. The latest one I have seen, and one of the best I have ever seen, appears in the *Sunny South*, of Atlanta, Ga., written by Hilton Castle; but I more than suspect that Mr. Udo Toepperwein, of San Antonio, Texas, stands back of the statements. I think it will not be devoid of interest if I make a few clippings from this article, doing so at random and without any attempt to connect them:

According to the last federal census Texas leads all other States in the production of honey, having to her account in 1900 nearly four hundred thousand colonies of bees, with an annual output of more than four million pounds of the product.

Seventeen per cent of the farms of Texas raise bees. The reason for the popularity of apiculture in the State is easily accounted for to the traveler. From the car window, if his trip be in the floral season, he sees spread out before him wild flowers which in grace, coloring, and beauty are unrivaled even by California's famous flora. The greater portion of these wild flowers are nectar-producing.

Bee culture in Texas, commercially, is a recent industry. Fifteen years ago primitive methods of management principally obtained, and the output was small. The old-fashioned hive was everywhere in evidence, as it is even to-day in some communities. The present tendency is strongly along progressive lines. There are a large number of apiaries in the State which are run on strictly scientific principles, having up-to-date frame hives that put to shame the old "log gums" of unprogressive apiarists.

There are bee-keepers in Texas who own as many as a thousand or fifteen hundred colonies, some of these colonies producing from one to two hundred pounds per colony. San Antonio is the largest distributing point in the State for apiarian supplies, having two of the largest establishments of the kind in the country.

While Texas stands first in production of honey and in number of colonies, she stands low on the list in some other ways, according to her census of 1900. Arizona, per colony, averages 49 pounds; California, Colorado, and New York, respectively, 29, 26, and 18 pounds per colony; Texas, 12½ pounds per colony. Her average is low, owing to those unprogressive bee-men who cling to the old-style hives, which yield but a few pounds of honey per colony, and who are averse to "intensive" bee culture.

Mr. Udo Toepperwein, a native Texan, and ex-president of the Texas Bee-keepers' Association, knows pretty well all about the honey status of Southwest Texas. He has been a bee-keeper from childhood, and is the son of an apiarist.

He says: "I can remember when farmers in Texas kept from one to two dozen box hives. These consisted

of empty logs, with a board nailed at the bottom, and one for a cover with a hole in it for the entrance. When the gums get pretty heavy, in the spring, the cover was knocked off, and the honey cut out while smoking with rags.

By this mode a good deal of pollen and larvæ and grown bees were taken out with the chunks of honey, and pressed with it before it was strained. The wax would then be melted, and sold at from 10 to 15 cents per pound. The industry gradually grew as the farmers became more appreciative of the abundant wild flowers of the State, and its advantages for the honey products. Up-to-date movable-frame hives, extractors, and smokers gradually came into use. North Texas is not so well adapted to the raising of bees on account of the prairies. Southwest Texas is more brushy, and the flowers that bloom in this region are generally nectar-producers, and the nectar easily accessible to the bees.

"In three of my apiaries, which are located in the horsemint section, my man says between the 1st and 10th he will take off forty thousand pounds of bulk comb honey, which is a great deal for one flow.

"In Uvalde County, where there is an abundance of catclaw and guajilla, the bee-keepers often average 200 pounds per colony. I have known them to get 400 pounds per colony when the colony was very strong in number of bees."

The largest honey-producing county in the United States is Uvalde, Texas, where many thousands of acres of guajilla, mesquite, and catclaw are to be found. The climate is dry and warm.



THE Jenkintown meeting of bee-keepers, on the 7th of this month, near Philadelphia, Pa., was pronounced an unqualified success. There were something like 400 present, and in the matter of attendance this convention excelled that of any National meeting so far as known. A further account, with a verbatim report of some of the speeches, will be given later.

GLEANINGS WITH A SUBSCRIPTION-LIST OF NEARLY 22,000.

OUR binding department now shows that GLEANINGS has a subscription-list of nearly 22,000. We are printing regularly 23,000 copies each issue, the surplusage to supply the demand for sample copies. The last issue reached 30,000. In spite of the unfavorable season our subscription-list has been growing at a rapid rate. This is perfectly logical. When the seasons are unfavorable one needs all the hints he can get in his business in order to enable him to make a success. It is poor economy to cut off the valuable interchange of experiences that one gathers by reading about the work done by others.

THE CANDY-MAN AND ROOT'S BEES ON THE ROOF IN NEW YORK CITY.

FOR the last two or three weeks the newspapers have been full of items about The A. I. Root Co.'s bees on the roof of the building where its office is located, 44 Vesey St., New York. A candy-man complained that

the bees in question were interfering with the work of his employees, and he appealed to the Board of Health, averring that the bees not only helped themselves to his sweets but stung some of his girls. The result was the issuing of an order by the said Board, requiring that the bees be removed from the roof. As there was an important principle involved, this order, if carried out in our case, would require the removal of all the bees in the city of New York, including those owned by the city in Central Park. Our managers at Philadelphia and New York made repeated representations to the Board, the result of which was it granted a stay of proceedings. The whole matter is in *statu quo*, and what the outcome will be can not now be determined.

There are two other roof apiaries as near to the aggrieved candy-manufacturer as our own. The Root bees can not, therefore, be the only trespassers, if trespassers at all.

CAUCASIAN QUEENS.

DR. E. F. PHILLIPS, in charge of apiculture, Division of Entomology, Washington, D. C., authorizes me to say that the only imported queen of the Caucasian race in the apiary of the Department is dead, and that it will be necessary, therefore, to stop the distribution of these queens for the present. There is now a terrible uprising in the Caucasus regions of Russia, and this renders it impracticable for the Department to get any more importations for this season. The A. I. Root Co. has two queens which seem to be fully up to the standard. Should they winter successfully we may be able to supply some half-bloods — Caucasian-Italian — and possibly some pure queens next season, but no deliveries can be made before June 15th at the earliest.

A SCHEME TO DRAW CROWDS AT A HONEY-STAND; HANDLING LIVE BEES BEFORE THE CROWDS AT COUNTY FAIRS.

EVERY year we do some business in selling bottled and comb honey at our county fair. This year we thought we would try the experiment of a "drawing card" by putting a man in a wire-cloth cage, with a dissected colony of bees on an elevated platform. We accordingly built a cage 5½ feet high, 6 feet long, and 4 wide, having a door on one side so that the operator could step in and out without tipping up the whole cage. We selected a colony of gentle bees, moved it off its regular stand, some distance away in the bee-yard, so as to let all the flying bees get out. We then moved it over to the wire-cloth cage before mentioned. When the crowds began to assemble we put one of our apiarists inside and had him open the hive, hunt the queen, lay his hands on the bees, practice shaken swarming, take up the bees by the handfuls, etc. When one man became tired of demonstrating, another would step inside. Did it draw the crowds? Well, I will show you some photos in a future issue, taken on the spot, that will speak

plainer than words. Did it increase the sales of honey? It came very near doubling them; for each operator gave a little lecture about the qualities of honey, the handling of the bees, etc. This was to whet the appetite of the crowd. In the mean time one of the boys in the honey-stand, with a speaking-tube, would keep up the call, "Here is where you get your good honey!"

The largest sales, without the demonstrating-cage, at any previous fair, was \$75; but the sales of honey recorded this year, the very first one we tried the experiment, was \$120. A number of pictures were taken, and more of the detailed story will be given later. As many county fairs will be held after this issue, those interested can profit by our experience.

A good demonstration can be made in an ordinary folding bee-tent such as is sold by dealers in bee-supplies for \$1.75. It is not quite so roomy as the wire cage described, but will answer a very excellent purpose, besides being collapsible like an umbrella, and portable.

A CURE FOR BLACK BROOD.

It is with considerable pride that GLEANINGS announces that it will soon publish what we hope to be a reliable, simple, and cheap cure for black brood. It is so simple and cheap that it seems almost absurd. Yet the proof of the pudding is in the eating. Not many days ago I came from a yard that, two or three years ago, had been seriously affected with the dread disease. This yard was none other than that of Mr. E. W. Alexander. The disease was so virulent that it wiped out his profits for two or three seasons. To-day the whole apiary of 750 colonies is perfectly healthy. Mr. Alexander has struck on a plan which he has never yet made public; but now having tested it for two seasons he feels reasonably certain that it is reliable.

GLEANINGS has made him a proposition, which he has accepted, for publishing it to the world, and the treatment will appear in these pages soon. I have every reason to believe it will be the means of wiping out the last vestige of black brood in all apiaries when the treatment is intelligently and carefully administered. In other words, the up-to-date progressive bee-keeper will not fear the inroads of this terrible disease any further; but the slovenly, careless, don't-read-the-bee-papers bee-keeper will have to go out of the business.

I do not know whether this treatment will be effective in a case of foul brood—I rather doubt it; but you may be assured that it will be tested by hundreds of bee-keepers all over the country. At one time black brood threatened to devastate the whole country, and would have made serious inroads into other States had it not been for the efforts on the part of the foul-brood inspectors of New York. I will not say more, because I am going to let Mr. Alexander tell his own story.

HOFFMAN FRAMES; A FEW WORDS ABOUT HANDLING THEM, BY A BROTHER-EDITOR; TIT FOR TAT.

OUR readers may remember a little discussion between the editor of the *Bee-keepers' Review* and myself, on p. 762, July 15th GLEANINGS, regarding the merits of the Hoffman frame, the Dovetailed hive, bottom-boards and covers. He copies in full my reply, and then says:

It affords me pleasure to have my brother-editor admit that he has no trouble in spacing the old-style Langstroth frames. I fail to see how any one of ordinary intelligence need have any such trouble. If a man does have trouble, let him do this: Let him carefully space the frames in a hive, and then note the space between them. Let him fix this in his memory and use it as a guide. For instance, my frames are spaced $1\frac{1}{2}$ inches from center to center, and my frames are $\frac{7}{8}$ wide, that is, the top-bars are that width, which leaves a space of $\frac{1}{8}$ between the top-bars. When I am putting combs into a hive I begin at one side and space them $\frac{1}{8}$ apart as I am putting them in. I don't put them all in helter-skelter, and then even them up afterward. Of course, I may have to press the last one or two a little closer together before I slip in the last comb, then I slip them back into place. The point is, I have in my mind's eye that $\frac{1}{8}$ measure, and use it when putting the frames in the hive, just as the self-spacers would use nails driven into the sides of the frames. Of course, it is not important that the frames be exactly $\frac{1}{8}$ apart. They may vary $\frac{1}{4}$ inch from this. It often happens that the ability to make this variation is an advantage. With self-spaced frames no variation can be given.

Lock-jointed corners make stronger joints than those that are simply nailed. Iron-bound corners would probably be still stronger, but such strength in a bee-hive is wholly unnecessary. If bee-hives were to be used continually for shipping goods by express, then there would be good reasons for making the joints as strong as possible; but, as a rule, a hive stands in an apiary the whole of its lifetime. If it is moved from one apiary to another, or even if sent by express, it is always attached to a solid bottom-board which holds it square. If a hive is thoroughly nailed with cement-coated nails of good size, the head side of the lumber being turned out, it will have all needed strength without any lock joints, or even any halving of the corners. In my opinion, these dovetailed corners will yet prove a serious objection. It is well known that, where timbers exposed to the weather cross each other, they are much more liable to decay—for instance, in bridges and sidewalks. In a plain square joint at the corner of a hive, the water can easily run down and out. Not so with a dovetailed corner, as half of the surfaces are horizontal, and the grain of the wood crosses at right angles. What I fear is that those dovetailed corners will, in a few years, begin to decay, because of their tendency to absorb and retain moisture. Of course, if they are kept well painted this will not occur; but the painting of hives is often neglected. To my mind, the making of hives with dovetailed corners is worse than useless expense—it will eventually prove a detriment.

Bro. Root speaks of the advantage of being able to handle Hoffman frames by the twos and threes. In fact, he speaks of this point as being of more importance than the self-spacing feature—at least, I get that idea from the way he writes. I have seen a good many Hoffman frames handled, handled a few myself, and have handled a large number of Heddon frames which allow of this manner of handling, and I must confess that I have seldom seen this manner of handling put into practice to any great extent. If we are handling frames in the production of extracted honey, they certainly must be handled singly. If we are looking for a queen the frames must be handled singly. If we are looking for a queen, and have been setting the frames over into another hive, we can replace them, after finding the queen, by taking them in threes if our fingers are long enough and strong enough to stand the strain.

I have never had any difficulty in securing wide boards for covers, but it is quite likely that the factories would have difficulty in finding enough wide lumber for this purpose at a reasonable price; and it is probable that, whether we prefer them or not, we shall eventually be compelled to use covers made of several pieces.

This shot about the Heddon hive and complication is a close one, and compels me to reply by "telling tales out of school," if such it might be called. In the new

edition of "Advanced Bee Culture," now on the press, the Heddon hive will not be placed at the head. In the last few years new features have sprung up in bee-keeping, notably that of "shook swarming;" and a hive that might be desirable in one epoch is not so in another. When I found myself drifting into bee-keeping again, I noticed that I did not adopt the Heddon hive. When I wrote the chapter on hives, it was quite a wrench to change it over; but I made it conform to my belief and practice.

It is really a pleasure to have a discussion with an opponent so fair as Mr. Hutchinson always shows himself to be. So fair is he, in fact, there is not very much left to say, for it is simmered down to a mere difference of opinion. But there are one or two points, perhaps, that I should mention.

My brother-editor, with considerable show of reason, brings up the question whether or not the lock-jointed (Dovetailed) corner in a hive is not stronger than it needs to be. Perhaps; but I have seen so many of the old lap nail-cornered hives gaping or weak in my travels among bee-keepers that it does not seem to me that making them strong at this very vulnerable point is a bad fault, if, indeed, it is a fault at all. Better by far be too strong than too weak; and as the factories make them it adds but little to the expense. As to the durability, there are hives in use that were made sixteen years ago with this kind of corner that are still good and strong, notwithstanding the paint-brush has never touched them. Theoretically the lock cornering might let in the weather where the fingers cross, causing premature rotting; but *actual usage* does not show that such corners rot more than the lap joint, at least that is my observation. I will admit that some hives with lock corners, in a dry climate like that of Colorado, might look the worse for wear. But the old lap-nailed joints, so far as I remember, looked far worse and required much more careful handling.

Let me take one incident showing where a strong joint has a distinct advantage. Suppose I have to remove an upper story from an extracting-hive. I have taken out all the frames, and there are a good many bees clinging to the inside of the story. If it is dovetailed at the corners I can throw it up in the air and let it come down in any old way, dislodging the bees; but if simply nailed, the thing is liable to come down ker-smash, or so badly racked that it will require the vigorous use of a hammer and more nails.

In his last paragraph he refers to a statement of mine that the Dovetailed hive with Hoffman frames was no more complicated than the Heddon hive with closed-end frames and thumbscrews. In this he exhibits a characteristic that is all too rare in the average correspondent, or, if you please, editor, of the day. There are very few men who in an argument, even on the printed page, will gracefully, if his opponent happens to land a good square shot, acknowledge that he has been hit. I trust that I may be as willing to do likewise.

Well, it is *my* turn to "tell a little tale out of school." When I visited Mr. E. W.

Alexander I became convinced that, when the hives are used exclusively for extracting in one apiary, and seldom or never moved, the old-style unspaced Langstroth frame has many distinct advantages peculiar to itself. These may overbalance those of the Hoffman when used for extracting. The only question with me, or ever has been, is, which frame (the Langstroth or Hoffman) was better adapted to the use of farmers or beginners. I am still of the opinion that the two classes mentioned should have a frame that will space automatically and exactly right. If Bro. Hutchinson had had the same experience I have had in getting beginners to space the frames right, and if he had bought up as many colonies of bees from farmers with the old frame as we have done, he might, perhaps, "tell another tale out of school."

A FAIR ANSWER TO A FAIR QUESTION.

At the Philadelphia meeting, held at the Root Co.'s Jenkintown apiary, the question was asked, "Why does the Root Co. seek to get the yields of bee-keepers all over the country, and yet withhold its own?" This is a fair question deserving a fair answer. In the first place, we ask for reports from producers all over the United States in order to give to our readers some idea of what the crop has been or will be. The value and importance of this information, coming at a time when everybody wishes to know whether the season has been good, medium, or poor, can scarcely be overestimated, *as it has a direct bearing on prices*. This question does not admit of argument. But you ask, "How about the latter half of the question? Why does not the Root Co. report its own honey-yield?" While it is true we have apiaries located in different parts of the country, those yards are devoted exclusively to the raising of bees and queens. Our whole aim and effort are to get increase of colonies, and queens in large numbers. This means that honey that is gathered is converted into bees and queens; and even then we have to buy largely to supply our demand. While we sometimes secure from 50 to 200 lbs. from individual colonies, cases of this kind are rare, especially at the Medina yards, where the locality is poor. We always have to feed after clover and basswood, to prevent starvation, for we have no late summer or fall flow.

THE CHANGE IN THE PLACE OF MEETING OF THE NEXT NATIONAL CONVENTION.

It will be seen in Convention Notices that the Executive Committee of the National Bee-keepers' Association, owing to the prevalence of yellow fever in the South, the rigid quarantine in several of the States, and the poorness of the season throughout Texas, has decided to change the place of meeting from San Antonio to Chicago, the same to be held during the fat-stock show, Dec. 5, 6, and 7.

I believe the action of the Executive

Board is wise under the circumstances; for I hold in my hand documentary evidence showing that rigid quarantine has been placed on Mississippi and Louisiana, and a limited quarantine on Tennessee, Kentucky, and Arkansas, and that Texas has declared complete quarantine against Louisiana and Mississippi. I am also informed that some of the Southern roads have pulled off some of their good trains. While we all, of course, seriously regret the conditions that make this change advisable, I believe we should all with one accord strive to have the next meeting at San Antonio in 1906. It is due and right. Then let us all combine to make it the biggest convention ever held in a State that has bee paradises galore.

Later.—Since writing the foregoing I have learned that the yellow-fever situation is so serious that it has been deemed wise to postpone the State fair to be held at Dallas, Texas, till a month later. This, I believe, will bring it till after the first frosts, thus effectually stopping any further spread of the disease. The question might be raised, "Why not have postponed the meeting at San Antonio till after the frost?" Whether the committee considered this I do not know; possibly this would have brought it to a time when no reduced rates could be secured. By holding the meeting at Chicago, in December, reduced rates will be guaranteed beyond doubt.

PROPORTION OF SUGAR TO WATER IN BEE FEED.

The old rule used to be two parts of sugar to one of water, the mixture to be placed on the stove, and heated until all was dissolved. But the rule now seems to be to mix *cold* one of sugar and one of water, for the reason that syrup more nearly approaches the consistency of nectar, and hence it is better ripened by the bees before it is put into the comb. I am not sure but we might feed to advantage, if early enough, two parts of water to one of syrup; but at this time of year I would not make the syrup thinner than equal parts; and late in the fall, if feeding should, unfortunately, be deferred, use a syrup made of two parts of sugar and one of water.

INDOOR OR OUTDOOR WINTERING.

The question will arise in the minds of many whether the indoor or outdoor method of wintering should be practiced. In the average latitude, along the 41st and 42d parallels, outdoor wintering, especially in the hands of beginners, should be practiced. North of parallel 42, indoor wintering may be practiced to advantage providing one has a good dry cellar where the changes of temperature will not go below 35 nor much above 50. Outside winter cases may be put on to advantage, even during September—the earlier the better. There is not much harm in getting too much packing; but considerable loss ensues if the protection is too meager.

THE CASE OF THE BEES ON THE ROOF IN NEW YORK CITY.

SINCE the editorial elsewhere in this department was printed we have received notice from Mr. Selser that the case of the bees on the roof will be dropped, probably, without prejudice to either side. Two orders for bees will take nearly all those on the roof, and the rest will follow soon.

BROOD-REARING STOPPING IN SEPTEMBER.

EVERY fall we get letters from bee-keepers, asking why their queens have stopped laying. They wonder why the queen has failed, and often send an order for another queen. Of course, old veterans know that the average queen will stop laying, in many localities, during the latter part of August and during September and October, particularly if there be no fall flow of any kind. This season, goldenrod will yield honey in many localities; and where such is the case brood-rearing will, perhaps, start again temporarily.

CONTRACTING ENTRANCES IN THE FALL.

BEE-KEEPERS in the northern States would do well to contract the entrances of all the colonies down to not larger than 6 inches by $\frac{1}{4}$ inch deep. Weaker colonies will stand a still smaller entrance. While the days may be hot at times, cool nights make it advisable to have small entrances in order to protect any brood that may be in the hive. Of course, all entrances should be contracted during *cold* weather; but we practice and advise contraction as early as the first of September. In localities where there may be a good honey-flow on, of course leave the entrance open wide enough so the bees can go and come comfortably without crowding.

SOME OF THE POSSIBILITIES OF OUTDOOR FEEDING; ITS USES AND ABUSES; EXTRACTING IN A DEARTH OF HONEY WITHOUT ROBBING.

WE have overcome to a great extent the difficulty of wearing out bees experienced with the outdoor feeding as mentioned on p. 906 of our last issue. We use 60-lb. cans with small holes punched in the top as before. These are *now* filled with syrup of the consistency of two parts of water to one of sugar. The weaker syrup has less of a tendency to make the bees scramble against each other. Then, to mitigate further the damage to the bees by reason of their struggling against each other, the 60-lb. cans are elevated some *ten feet above the ground*. The wire bail or handle that is in the top is unsoldered. The can is then turned upside down, and the handle is soldered to the bottom. The other end of the can is perforated with small holes, as before explained. A rope is passed over a limb of a tree, 12 feet or more above the ground. When the can is filled with the two-to-one syrup, the rope is tied to the bail (now on the bottom of the can), when the can is

hauled up to the height of about 10 feet. It may take several hours for the bees to find it; but when they do they will begin in earnest. The bees will form in bunches at the perforations, and drop down; but instead of dropping with a thud or a jar to the ground or in the grass, sustaining more or less of a shock, and wearing out their wings in the scramble to take wing in the grass, they catch wing *before* they actually strike the ground, and fly up again. They no more than get a little sip of syrup than down they go again, catch wing, fly up, take a sip and down again, and so on. The under side of the tin is so smooth that there is nothing for the bees to cling to, and they can not do very much scrambling. But just the minute two or three get to tugging at the same hole, down they go. The result is, we have produced almost all the conditions of an artificial honey-flow. It takes the bees so long to get a load of syrup that they fly back and forth to the hives quietly, and without excitement. Two 60-lb. cans of dilute syrup will keep a yard of some 300 colonies during an absolute dearth of honey quiet for a couple of days so that the hives can be opened indiscriminately, and combs exposed without any robbing. It begins to develop now that the bees that do most of the robbing represent but a very small portion of the whole yard. It is these that we keep busy by outdoor feeding. As they can not do any scrambling to any extent there is not the same wear and tear that we experienced in our early experiments. We fed up for winter all of our 300 colonies at the home yard by this outdoor feeding. What is more, this syrup is ripened in nature's way, and therefore must make an ideal winter food.

I am becoming more and more convinced that there is more to this outdoor feeding than we formerly supposed. Very often extracting has to be deferred until after the honey-flow, or during an absolute dearth of honey. It is *then* that robbing will go on at a furious rate; for it is simply impossible, in opening the hives, shaking and brushing the combs, to prevent robbers from getting a sip of honey now and then—just enough to put the whole apiary in an uproar. Although I have not tried it, I feel confident that this robbing nuisance can be entirely overcome. Take ordinary cheap honey, and dilute it considerably with water. Put it into two square tin cans prepared in the way I have described, two days before extracting is to be done. I recommend in this case the use of *honey* rather than syrup, so if some of the fed product goes into the combs that are extracted it will do no harm, because it will be honey just the same. In the two days intervening the bees will have found the feeders and will get nicely started. Probably the two cans of feed will last them for the two days. Two cans more, at least, will enable the apiarist to extract all of his honey; for the would-be robbers have become accustomed to the feeder; and if some few bees should steal a little honey from

the combs it will not cause a *furor*, because other bees will naturally suppose it comes from the feeders. The net result of this is, that 100 or 150 lbs. of honey borrowed from the bees enables one to take from them several tons of extracted honey in a dearth.

A few days ago at one of our outyards the boys attempted to do a little in-hive feeding. It was not long before the apiary was in an uproar, and one of the men phoned up to our office to know what he should do. I telephoned back to restrict the entrances of all the hives with green grass, and stop inside feeding or opening up any more hives, and to prepare immediately two square cans for outdoor feeding. This they did, hanging the cans on the limbs of two near-by trees on the outskirts of the yard. It took the robbers a little time to learn where the feed was. As soon as they discovered it, robbing began to let up. The next day one of the boys went back to finish up his work with the colonies. He opened up the hives indiscriminately, without any trouble from the robbers. I am sure we could have done extracting or any thing else, because the combs were exposed just as much as if extracting had been going on.

A good many county fairs will be held now within the next thirty days. Some bee-yards will be located near some of these fairgrounds, where watermelons will be cut open, and molasses candy made. If two outside feeders be hung up two days previous to fair time it will effectually stop any robbing on the part of the bees around any of the candy-stands. We demonstrated this conclusively a year ago, and we now feel that we are master of the situation.

But there may be some canning of fruit; and if your bees are a nuisance, start an outdoor feeder and keep it going until the canning season is over. Perhaps the owner of a cider-mill lodges a complaint. As he will probably run his mill for thirty or ninety days it will not be practicable to run outdoor feeding for that length of time, unless the whole apiary needs a general feed.

The best thing to do in that case is to get mosquito-netting and screen the mill. If, on the other hand, the yard is short of stores, and will require the feeding of several barrels of sugar, and if there are no other bees in the vicinity, outdoor feeding can be practiced to great advantage.

So far I have not said any thing about the abuse of this method of stopping robbing by giving the bees food. One of the abuses is letting the bees get at the syrup so that they can take 50 or 100 lbs. within an hour, wearing their lives out prematurely. The grooved-board plan makes this possible; while the square can, with holes punched in it and elevated ten feet above ground, reduces the wear and tear to a minimum, or not much more than a natural honey-flow.

Another abuse would be feeding your neighbors' bees or stray bees in bee-trees. Obviously the only thing to do is to feed in the hives, unless you can arrange with your neighbor to pay his pro rata of expense.



NOISE AND SWARMING BEES.

BY PROF. EDWARD F. BIGELOW.

The following item has been published recently by several newspapers:

BELLS AND BEES.

It is a foolish notion to suppose that the ringing of bells or "tanging" of tin pans will cause a swarm of bees to settle. The origin of this custom dated back to the reign of Alfred the Great, who, in order to prevent disputes regarding the ownership of a swarm, ordered that the owner should always ring a bell when his bees swarmed, and ever since then the good farmer's wife has been rushing out with ringing bells whenever the bees swarmed; and the fact that they settled verified, in her own mind, the belief that the bell did it.

The ringing of bells may or may not be a "foolish notion." This much is, however, to be said in its favor. It is not so foolish as the explanation of the origin of the custom is false. This so-called explanation is an insult to all country people who have practiced the custom of making a variety of noises at swarming time. The custom has never been limited to the ringing of bells and the pounding of tin pans, but includes also throwing dirt, yelling, shooting at the swarm, flashing light from mirrors; in fact, old and young at such times have always joined in a regular Fourth-of-July demonstration with a general pandemonium of noises. Surely Alfred the Great did not promulgate all these to maintain ownership, neither has any other royal authority done so. I wrote to the Professor of History in each of three leading universities, and every one says that Alfred the Great never issued such an edict. I quote from Prof. Charles Beard, of Columbia University, while letters with practically the same statements were received from the others:

I have looked up the question of Alfred's edict on bees. I can find no record of such an edict among the documents that have come down to us from Alfred's day. It is probably an old custom attributed, like most early English institutions, to Alfred. I regret that I have not been able to find any traces of the origin of the tradition.

Such items, going the rounds of the newspapers in a variety of forms, are evidently due to the dreams of some space writer. Their only value is so much a line to the originator.

What appears at first thought to be an interesting explanation of a common old-time country custom is the rankest of insults. Our fathers, grandfathers, and the members of their families may have been mistaken, but they were not so foolish nor so nearly insane as to unite in a work for which they could give no reason, and from which they derived no benefit. Their theory was that any kind of confusion forced the bees to alight because the noise prevented them

from following the leadership of the queen. And may not this theory have at least some truth in it? Country people are pre-eminently practical, and not much given to theorizing. There must have been results to have made such a custom widespread for generation after generation. Even our imaginative reporter admits age to the custom, carrying it as far back as the time of Alfred the Great! Many a country-born and country-bred person will tell you that he recalls many an experience in boyhood days of runaway swarms forced to alight by some kind of hubbub, or a confused uproar of discordant sounds. Practicing the custom may have been ludicrous, and doubtless it was in many respects; but the theory seemed reasonable. Flight requires leadership—call it the leadership of the queen or "the spirit of the swarm," or what you please. Confused, irregular, and violent vibrations must interfere with this leadership, especially when such highly organized and sensitive creatures as bees are concerned.

Drive a flock of sheep on a country road. Three or four will make a dash for a cart-path into the woods, or through the lowered or fallen bars. Throw a stone among those few, confuse them, and their leadership is at an end. No more sheep go aside. Sheep are not so highly organized, neither have they so delicately balanced a nervous system as bees; but, stupid as they seem, if you throw stones ahead of the flock, all are checked or stopped.

I know that a writer on the subject of "Bees," in Appleton's "New American Cyclopedia," says, "It is generally irritating to the bees, and unnecessary if not useless, to endeavor to make the swarms collect by a din of horns, tin pans, and bells." Irritating to the bees? Of course it is, and that is exactly what it is intended to be. I have been familiar with the process from my earliest youth: it is among my first experiences and recollections; and although my personal antiquity does not reach quite back to the time of the Great Alfred, yet what has always been done must have a good reason for its continuation in modern times. One of the most pleasing recollections of my boyhood is a remembrance of the sudden outburst of a rattling tin pan, and of the ringing of an iron pot lustily beaten by my bee-keeping neighbors. That discordant uproar lent speed to my feet, and got me through the fence with unconscious alacrity, to find Aunt Annie, with lips compressed and a look of determination on her face, beating a tin pan with the poker, and Uncle Joseph leaping about the garden path, hatless, coatless, but vehemently pounding an iron pot with his cane. The air was full of bees, and full of a clamor that filled me with delight. "Get a pan, child alive, and be as quick as you can! Pound, now—pound hard—I can't lose this swarm." And she never did. My noise was above all other noises, you may be sure, and the swarm always alighted on the pear-tree above the original hive.

I recall that our hired man was hoeing in a cornfield on the summit of a hill. A swarm of bees flying over came very low to the ground. He threw dirt, and yelled like a madman, partly because he knew of the custom, and perhaps even more because he was frightened. The bees alighted on an apple-tree not two rods away. He ran to the farmhouse, a quarter of a mile away. Several members of the family went with hive, sheet, and other paraphernalia, and the swarm was brought home.

I have my suspicions that "Dutch Willie," the hired man, was "irritated." Perhaps the bees were also. Just how much was "unnecessary" I don't know. I have recorded the events. The reader may speculate as to how much was cause and how much effect.

I never, in all the days of my youth, knew these pan-beating and pot-pounding neighbors to lose a swarm; and the boy never lost an opportunity to help, at a safe distance, and to make a racket, while these were the only occasions when he was not reproofed for his noise.

Whatever may be the philosophy of it, the result is eminently satisfactory; and although the learned writer in the Cyclopædia says the noise is irritating and unnecessary, if not useless, yet I am constrained to remind the reader of that proof of the pudding, of which he has so often heard.

It is important to note that the custom has been discredited and ridiculed only by those who have never practiced it.

Stamford, Ct.

[It is possible that bee-keepers heretofore have not given enough attention to the subject of noises of some kind to drown swarming-notes, either of the queen or of the scouts; but from experiments which I have made myself I am satisfied that water from a spray-pump, thrown on bees while in the air, is vastly more effective than any noise that may be made. The effect of the water is largely mechanical. It weights down the wings, thus impeding flight. It may also have the effect of making the bees believe that a rain is in progress, and that, therefore, it were better to defer the swarming until a more favorable time.

Whether a noise of some kind has a tendency to induce the swarm to alight may be hard to prove, for the simple reason that ninety-nine out of every hundred swarms will cluster any way before taking a final flight to its future home wherever that may be.*

But I am sure of this much: That with a spray of water I have been able to head off a swarm and drive it in almost any direction I desired. Some years ago, when I was making some experiments along these lines, I found I could drive a swarm of bees while in the air all over the field; I found I

could even direct their flight toward some particular tree; then when they were flying around it I doused them freely with water. If I remember correctly, some have reported that throwing dirt up among the bees will produce practically the same effect. While it might impede their flight somewhat it would not make it laborious so the bees would be compelled to seek a place of rest, and where, too, they might discuss the question of a rainstorm in a bright sunshine.

That the tanging of tin pans and pounding on old kettles originated in a certain edict of Alfred the Great or any other king, is possibly a myth. The only reference that I can find in our works is a statement by Huber, who, referring to the custom of ringing bells, etc., says, "Butler thinks that these noises were originally intended to proclaim to the neighborhood that a swarm had risen, and that they might know whence it came and to whom it belonged." We consulted our volume of Butler's *Feminine Monarchy*, bearing date of 1609; but after a careful search we do not find any reference to the custom or its origin. I conclude, therefore, that Huber referred, evidently, to some statement made by that author in his Latin works, for he was a prolific writer, even at that time, on agricultural subjects, both in Latin and English. Butler, if any one, would be liable to make reference to the ancient custom, if it existed, because he probably would be familiar with any edict that might then have been in existence or previously in force in England.—ED.]

Later.—After the above was written we mailed a copy to Mr. Bigelow, who says:

I have my suspicions that the origin of this story is in *real merit* and efficiency, probably exaggerated in some respects by actors and then leading to ridicule on the part of others.

As a countryman I resent the imputation by the so-called funny papers that "we farmers" have been doing such "fool things" for many generations. I guess we know what we are about, some of the time, city chaps to the contrary notwithstanding.

EDWARD F. BIGELOW.

PAPER SECTION BOXES.

Why Not Follow in the Footsteps of the Manufacturers of Berry-boxes?

BY J. E. JOHNSON.

Seeing that Dr. Miller and the editor of *GLEANINGS* are having considerable of a controversy about basswood getting too high in price for sections, I should like to offer a few words.

For several years I have been using two-piece wood quart berry-boxes for strawberries and raspberries; but this year I tried 2000 paper berry-boxes, and I like them so well that I shall never buy any more wooden berry-boxes. These boxes are made by Mullen Bros., of St. Joseph, Mich., and cost only \$2.25 per thousand, while good wooden boxes in the flat cost \$3.00 to \$3.50 per 1000. The paper boxes come all made up, nested,

*Replying to this point, Mr. Bigelow adds:

"This point is weak. The noise is made *after* the clustering, in my experience, when the swarm has refused to go into the hive or to remain."

so in reality the paper boxes are only half as expensive, as it is quite a job to nail up wooden berry-boxes. These paper boxes are coated with paraffine wax, and can be left out in the rain without serious damage. I think the paper from which the boxes are made is coated on both sides by some roller process.

Now, Mr. Editor and manufacturer, why can't you invent a paper section box? You know paper is cheap—not only so, but it can be prepared in any color, of any thickness, and any degree of hardness, from soft as velvet to hard as flint; and by the use of paraffine they ought to be easily made so that the bees won't use them for chewing purposes.

I hope it is only a question of time till paper can be utilized satisfactorily as section boxes, and be as good as and possibly better than the one-piece wood section box.

HOFFMAN FRAMES.

I find the Hoffman self-spacing frame perfectly satisfactory when you get your combs nice and straight so you can take out and put in other combs, and then squeeze them tight each time you go through a hive; but if you are careless to begin with, and get them built too thick, then you can't shove them up close to each other, as they would crush the bees; but if you get well-made combs to start with, and always shove them up tight, using the dummy, nobody can help liking them; not only so, but they can be handled faster than loose hanging frames. I have 40 colonies on such frames, and others on loose hanging frames; but I always prefer to handle the former if they have been kept as they should have been. I have a few hives where the combs were built on strips in which they were not built straight, and they have crowded out the dummy; but that was my fault, not that of the frame. I think others who don't like the Hoffman frame could find mostly that the fault is in themselves in not getting combs built properly.

DOUBLE BROOD-CHAMBERS.

However, I am using several hives in which two Ideal supers of eight frames each are used on the brood-chamber, and I like them so well that I shall put my increase in such hives. For the last two winters I have not lost a single colony in such a hive, while I lost several in other hives; and I think the space between the two sets of frames is a big help in giving opportunity for the bees to shift their position from empty to full combs in cold weather. Out of 74 colonies, 18 are in such hives. I use the Ideal sections, and in that way the whole hive is composed of supers; and in case of winter loss each colony would contain 16 nice extracting-combs. I produce both comb and extracted. I can also use sections and extracting-combs in the same super, as per the Townsend plan, providing extracting-combs are white and clean.

White clover is all gone, and the weather has been too cool for comb honey; but I

shall have a fair crop of extracted and about one-half or two-thirds of a crop of comb. Sweet clover and catnip are in bloom; and as weather is favorable the bees are storing fairly well, and also drawing new comb; in fact, catnip and sweet clover are doing better than I have ever seen them do before. Sweet clover is quite abundant this year, and so is catnip. The honey coming in from these two plants is always of very fine flavor; in fact, I have always found that, the more abundant catnip is, the finer the honey, every time. I have no faith in the idea that catnip honey is of bad flavor. We have lots of it here, and some of it goes into the supers nearly every year; but what percent, I don't know; but there is at times enough to give off a scent of catnip when it is warm and being extracted, and the flavor is very good.

Williamsfield, Ill.

[The comparative cost of berry-boxes of paper at \$2.25 per 1000 and wooden ones at \$3.00 to \$3.50 brings up the question whether it might not be possible to make honey-sections of paper. But a berry-box is not required to meet the exacting conditions of a section. The former may be more or less flexible, and not at all interfere with the carriage of the berries. We already have in our office a paper section box; but the cost of it, we find, would be considerably more than of one made of wood; and, besides, it does not look as neat nor as durable. You will find an illustration and description of sections made of strawboard in our issue for May 1, p. 548. This material, provided it could be made neat enough, would possibly be cheap enough for a honey-section. But strawboard is vastly more difficult to cut than wood of the same thickness.

The wooden boxes permit of being sent in the "knock-down," or in the "flat," as we say. A paper box that would fold over at the corners would be a somewhat flimsy affair. The difficulties in the way of a section box made of any other material than wood seem almost insurmountable, yet we shall be on the alert to discover any new substance; and you may rest assured that, if something can be had to produce a box as good as those now sold, at a less price, we will announce the fact to the bee-keeping public.

Your experience with Hoffman frames, when you find they will handle faster than the ordinary loose hanging frames, is quite in line with our own experience and that of hundreds of others. Why there are some who find them difficult to handle I can not explain unless the frames are not properly nailed together, not properly made in the first place, or not properly spaced after they get into the hives. Nearly every instance of dissatisfaction might be accounted for on one or possibly all of the causes combined. Of course, all self-spacing frames must be spaced close together. There is a use and an abuse of any good thing.

With regard to double brood-chambers, I

have always had a friendly leaning toward them; and I am not sure but an Ideal super with Hoffman frames, V edge, the wide part of the end-bar running clear down full depth, would make an "ideal" combination in fact as well as in name. I believe the time will come when many of our experts will be using divisible brood-chambers. There is no getting around it, they have some desirable features that can not be obtained in a standard deep brood-nest. A Hoffman frame with the end-bar full depth for a brood-nest no deeper than would take a 4x5 section could be used very satisfactorily, at the same time affording all the advantages of full-closed-end frames, without some of their disadvantages. Then another very important point, the super and brood-nest would be one and the same. Narrow boards always cost less than wide ones, per square foot; and as lumber becomes more scarce, bee-keepers may be compelled to use hives taking narrow lumber.

I will not attempt to enumerate all the advantages of a shallow brood-nest; but I can not forbear mentioning one more. Brushed or shaken swarming is now coming to be common practice among advanced bee-keepers. The shallow brood-nest, as Mr. Heddon so clearly explained years ago, offers exceptional facilities for getting all the bees off the combs without touching a single comb.

This is an interesting field for discussion, and our columns are open for further consideration to those who have used practically this combination, and there are many who are using it, as we know from our sales record. It goes without saying, that a shallow brood-nest should have a spaced or fixed frame.—ED.]

E. W. ALEXANDER'S METHOD OF ARTIFICIAL INCREASE.

How to Succeed Without Hunting for the Queen.

BY J. M. ROPER.

I have been reading about the various methods of artificial increase in bee culture, especially those of Mr. H. G. Sibbald and Mr. E. W. Alexander; and after weighing both in the balance I consider the method of the latter a most admirable one, and far ahead of that of the former.

I am only a young bee-keeper; but I enter the profession with a determination to know all I can of the science (for bee-keeping is a science), and to succeed if possible.

In applying artificial increase in my apiary I found, as I still find, that the ordinary method of making nucleus colonies with one, two, or three frames of brood and bees a rather tardy one, requiring a good deal of time, and sometimes much trouble, before these small colonies become self-dependent.

Before reading of Mr. Alexander's method the subject suggested itself to me that,

instead of forming nuclei in the ordinary way, I might form them in connection with the brood nest or chamber, in the form of a super. The method I adopted and still follow is this: Going to the colony from which I wish to form my nucleus I divide it into two equal parts, adding frames with starters of foundation to each half of the divided colony. I then place the new colony, or nucleus, on top of the old colony, minus the queen-excluding honey-board, thus allowing the queen free access to both colonies. I allow them to remain in that condition for ten days or two weeks, after which I separate them without paying any attention to the location of the queen. In two or three days the appearance of queen-cells reveals the queenless colony. If I have a queen available I then introduce her or give a ripe queen-cell, if there is one, and then destroy all the newly built cells.

By this method I find that my new colonies (being formed not only with bees and brood but also with larvæ and eggs) work up very quickly, and in about four weeks are quite able to give off another colony, while the original colony, if it has the queen, is able to do so in less time.

The difference between this plan and that of Mr. Alexander seems to be the seeking-out of the queen and putting her in the new colony, and the intervention of the queen-excluding honey-board.

With regard to Mr. W. H. Crawford's suggestion, page 606, of giving a ripe queen-cell or virgin queen to the queenless colony while on top of the excluder, the question arises, "Would it be workable?" The colonies being practically one, and the bees, minus the queen, having access to the upper and lower stories, and having intercourse with the queen below, would they be likely to tolerate another queen or a queen-cell? If, however, this could be carried out successfully it would add greatly to this method, and the upper story could have an entrance in the ordinary place, turned in the direction opposite from that of the brood-nest by which the young queen could find an exit for fertilization, rather than go through an "auger-hole."

St. Margaret's Bay, Jamaica, June 21.

SWARMING UNDER CONTROL.

Better to Keep Down Increase than to Try to Prevent Swarming.

BY J. W. SMITH.

I have read with interest the articles that have appeared in GLEANINGS on keeping bees from swarming; but during the last fifteen years I have tried nearly every conceivable method, such as Dr. Gandy recommended, the Townsend method, and methods of my own. After all, it is my opinion and experience that, if bees want to swarm, they will do it, even if I would combine all the methods known against them. No

doubt many others keep down increase the same as I do. In the first place, all of my queens are clipped early in the spring, and some colonies are run for comb honey and some for extracted. Several colonies swarmed this season that had sixteen L. frames full of comb above them, and did not store, previous to their swarming, any honey above their brood-nest. Of course, they returned to their hive for lack of a flying queen, and then I swarmed them artificially, giving eight empty frames in the brood-nest, and eight to sixteen above the brood-nest, using a queen-excluder. The brood is placed in a new location with but few bees, and after that the brood from each hive that is swarmed is placed underneath the first until I have a stack of five. After the brood is all capped the upper stories can be removed and placed over any other hive that is being run for extracted honey, and other bodies of brood can be placed under the first hive, where I place all brood from swarming colonies.

After the swarming fever is well over I put a queen-excluder in this brood colony, confining the new queen to the lower story, and am always very careful that no unsealed brood is above the brood-nest. Of course, this makes a powerful hive, and in a very short time they will fill 24 to 32 frames full of honey for extracting purposes. As above stated, I always wait until the swarming is over before I confine the queen to the lower story in this new colony; and when brood is placed under, all queen-cells are cut down from such brood-frames; and usually I take an upper story off and give to another hive, as I always record the time when each body of brood was placed. In this way there is always a certainty as to the condition of the brood, whether or not it is past the stage when bees could raise a queen from it.

The colonies that are run for comb honey nearly always swarm before they go above, even on "baited" supers. After they return they are given the "shook method" and placed on eight frames with just starters in wired frames; after two days sections are given them unless I give them one comb below; then sections are given them at once, and the queen won't bother the sections above.

You see, by my method I can keep down the increase of colonies to a great extent; but to keep down swarming is beyond me, and I think most of the bee-keepers are in the same boat; but confining strong colonies to sections greatly encourages the desire to swarm.

Dayton, Ohio, July 6.

[Hiving on an empty brood-nest or starters is getting to be more and more the orthodox practice among progressive bee-men. The plan described above, while not new, I believe to be excellent. Usually the two or three story extracting colonies will not swarm, and I am surprised that our correspondent should have swarming to the extent indicated.—Ed.]

H. R. BOARDMAN.

The Man Who Has the Reputation of Wintering Indoors without Loss; an Interview with One of the Brainiest Bee-keepers in all Beedom; Essential Factors in Cellar or Repository Wintering.

BY E. R. ROOT.

Just about 25 years ago wintering was the all-absorbing unsolved problem. No one really seemed to be master of the situation, and in the meantime bees were lost and hopes blasted. So great were the losses that this journal had, and maintained for a time, a department entitled "Blasted Hopes." Various causes were assigned for the loss. One was, too much pollen in the combs; and this gave rise to a long-drawn-out discussion on the pollen theory. Another was honey-dew; and still another, dark fall honey. As a matter of fact we now know that none of these were the real cause.

In the winter of 1881 and spring of 1882, when three-fourths of all the bees in the Northern States were lost, and the remnant were in weak condition, the situation came almost to a crisis. Many were going out of the business. Along about this time there loomed up on the apicultural horizon a man who "wintered bees without loss." It was none other than the subject of this sketch, of East Townsend, O., one of the brainiest bee-keepers in all beedom. Winter after winter he put all his bees in his upground repository and in his outyard bee-cellar, and in the following spring he would bring out the same number he put in, all in good healthy condition. This journal had the honor of giving a picture of the man away back in 1883—just 22 years ago. While his success up to that time had been phenomenal, he has during these years continued to winter his bees, except one winter when he tried an experiment outdoors, the results of which were far from satisfactory. Again, in 1889 GLEANINGS gave a picture of the man, of his bee-cellar, and told me the secrets of his success.

As wintering indoors is being revived again I decided this summer to take an automobile trip to Mr. H. R. Boardman and to H. G. Quirin, the queen-breeder, of Parkertown, a little further on.

In the latter part of July my son and I presented ourselves at the residence of Mr. Boardman. We halted the machine under a big evergreen, where, whom should we meet but the same Mr. Boardman, looking scarcely a day older, even though over 20 years had elapsed since I had first seen him. Notwithstanding he is past, by two years, the allotted age of threescore and ten, he was active and alert, and his enthusiasm over bee problems seemed as warm as ever. Feeling that I had before me a master of the science of indoor wintering, if not the best-posted man on the subject in the world, I fired questions at him at a rapid clip. In all the twenty and more years his methods

have scarcely changed except that he attaches more importance to ventilation, dryness, and uniform temperature—or rather, perhaps, to put it more correctly, he is more convinced than ever that these are essential factors in good wintering.

THE SECRETS OF SUCCESS FOR INDOOR WINTERING.

We went over to the repository where had been done such excellent work. Here was a building 12×50 feet, the walls 14 inches thick, packed with sawdust, I think. It was divided off into three compartments, as shown by the diagram sketched below. As



the seasons had been so poor of late he had reduced the number of his colonies so that he was wintering all his bees in one compartment on the south end. I said he scarcely changed his method; but still he has changed it slightly, and this is in regard to ventilation. He puts 100 or more colonies in one of the end rooms. The middle room and the other end room are left without bees. He found at times it was detrimental to give fresh air to bees directly from outdoors. Ordinarily the air in the other two rooms, when the door of the bee-room is opened, is sufficient to freshen up the air where the bees are. There are times, however, when he lets fresh air into the two outer rooms; then when it warms up to the temperature of the repository he lets it into the bee-room.

The amount of ventilation given depends largely on the time of the year, more being given in late winter and early spring than in the fall or mid-winter. In the old way he used to have the bees divided in the two end rooms, letting the air come into the middle compartment, and from there dispersing into the other two rooms; but by putting all the bees in one place he is able to take in a larger amount of fresh air, letting it equalize with the temperature of the building; then it is given to the bees so that it does not greatly disturb them. The cellar has a cement bottom; and as the repository is entirely above ground it is always dry inside, or practically so. While he has a small stove in the middle compartment, he does not use it now as he formerly did, to warm up the air in very cold weather. He puts enough bees into the end room so the temperature does not drop to a point where it will do any harm.

When Mr. Boardman was asked whether an underground room or cellar might not have a more uniform temperature, he admitted that it might; but dryness, so essential, would thus be sacrificed to some extent. He did not know why bees should not have just as pure and dry an atmosphere as human beings or any other warm-blooded animal. For that reason he prefers a build-

ing above ground. His hives are piled up one above another, five inches apart, as explained in our ABC of Bee Culture, without bottoms, in such a way that the top hive will stand on the two hives below.

Mr. Boardman volunteered the information that the conditions that we had in our machine-shop cellar, by which fresh air was admitted from an outer and larger room with dry floors into the inner bee-room, was ideal. When I asked him why we lost so heavily at our outyard bee-cellars, he explained that we probably had dampness and variation of temperature, which was true. He thought those two factors were sufficient to account for the loss. Eliminate the dampness and control the temperature with a reasonable amount of ventilation, and the loss should be no heavier at our outyard cellars than in the one under the machine-shop. And I would say in this connection that our machine-shop cellar is practically all above ground except one end that is partly submerged. In conclusion, Mr. Boardman expressed himself most decidedly that dryness, fresh air that has been equalized to the temperature of the building, and reasonably uniform temperature, were factors in good wintering. Any cellar reeking with dampness, or with standing water, or any place that is unfit for the accommodation of human beings, is an unfit place for bees. So much for the cellar-wintering problem.

THE BOARDMAN SOLAR WAX-EXTRACTOR.

While Mr. Boardman is a past master in the wintering art, he is scarcely less an authority on a good many other subjects relating to bees. He is the inventor of the large Boardman solar wax-extractor, a machine of which he makes a great deal of use in melting up combs, evaporating honey, etc. I told our friend I was afraid he was losing a good deal of good wax in his slumgum, which, he stated, made excellent material for starting fires. I have sent him a wax-press, requesting him to put some of the slumgum through it. Later he will give the result of his experiments. But we have not been able to do any thing like a clean job with the solar alone. It will handle all kinds of scraps of combs, cappings, and the like, in which there are no cocoons from brood-rearing. But our slumgum from brood-combs from the solar wax-extractor has usually contained a large per cent of wax.

Many years ago our friend tested baby nuclei, and made a success of them, so that we may almost consider him the pioneer in this.

BOARDMAN ON OUTDOOR FEEDING.

Our conversation drifted to outdoor feeding. Here, again, he had had large experience covering many years. Where one *knows* the source of his combs, and feels sure they are free from foul brood and other diseases, and desires to have them cleaned up, he felt sure there was no better way than to expose them right outdoors where bees can get at them. He showed me nails

(on which he hangs these combs) driven in the sides of the buildings surrounding the bee-yard. Notwithstanding he has at times exposed a hundred or so such combs, and the bees pounced on them in great numbers, he has never experienced any bad results. But he says outdoor feeding must not be practiced when the bees are on the verge of starvation—a fact which we had recently pounded into us by some experience that we will remember for a time.

Another thing, our friend has found that the bees should not be given a mere taste, but a lot of feed at one time; then they must be allowed to clean up the syrup (or honey in combs) *entirely* until they are satisfied that it is all gone. If the combs are taken away from them when the job is only half finished the bees will be liable to pounce on weak colonies in the yard.

BOARDMAN'S ENTRANCE FEEDER.

Mr. Boardman is still using his feeder for in-hive feeding where he desires to favor one colony above another; for it will be remembered that he is the man who brought out the Boardman entrance feeder—a very excellent feeder when used carefully and in a proper manner.

KEEPING HONEY LIQUID.

Our friend has a method of keeping honey liquid almost indefinitely. He has not yet made it public, and whether he will or not will depend on future developments. He does quite a large business in bottling extracted honey, and he has no difficulty in keeping that honey in liquid condition at all the retail stores until it is sold. Of course, I did not ask him, even for my own private information, what it was; but he said this much: He puts absolutely nothing in the honey by way of preserving it. The plan is only a *method of treatment* of the honey itself.

BOARDMAN THE MAN.

We have already given a picture of Mr. Boardman, of his bee-cellar, and bee-yard. By referring to the A B C book, under the head of "Wintering," the reader will find some of these reproduced; but for the purpose of this article I took two snapshots, the results of which are given herewith. I had asked Mr. Boardman to sit out on his porch with his little girl—to assume his natural easy position while working out some of his new schemes. I pressed the bulb, and the result is before you.

Even a casual acquaintance would reveal the fact that here is a man of no ordinary ability. He impresses one as being a deep student of nature, a conservative and a careful thinker; and, while he is modest, yet one can not help being impressed with his scholarly manner, notwithstanding that he protests he has never had any extended school training.

Another view shows a cool retreat just off the porch of the house, looking over toward the bee-yard and the winter repository. The hammock is delightfully inviting. The shade, the soft breezes, and the merry hum

of the bees all combine to suggest quiet rest. If you desire to know more about this man you are referred to the biographical sketch in the back part of our A B C of Bee Culture.

OUTDOOR WINTERING OF BEES.

Hives, if Packed Warm Enough, will Winter Bees as Well as a Cellar.

BY E. N. WOODWARD.

The bee-keeper who has kept himself within the safe beaten paths of his own experience, and who has avoided the many new forms and fancies that spring up and seem to flourish for a day, may congratulate himself that he is not thrown off his base or led into temporary disaster by following some line of manipulation or some plan of management that is not practical or progressive.

I would not discourage experiment nor lay a straw in the way of progress. Thought, theory, experiment, each is a key that unlocks the door to hidden truth. We may fall into error at times, but the success attained is the reward of investigation and experience; and this leads me to say, in regard to wintering bees in this northern climate, that a plan or a practice that has proved itself true for a period of years without a failure is a safe plan to follow for the one making the trial, if not for others.

In this locality the temperature often goes down from zero to 20 below; and one great reason, and perhaps the chief reason, why some have failed in outdoor wintering of bees is that they are not packed warm. I formerly wintered my bees in the cellar, and lost them in the spring by the score. I then tried an outside repository with about the same percentage of loss. I have also packed them in chaff, and still lost a large number; but for the past several years I have lost no bees of any account.

I now place them in winter cases, three hives in a case. These cases are made of good lumber, and papered with thick building-paper all around the sides and bottom. I placed 91 colonies in these winter boxes last fall, and every one of them is in fine condition except one in a single box that I overlooked in packing. Since I have adopted my present plan I have not been troubled with spring dwindling. What I wish to emphasize in this connection is, that bees must be packed warm, and here is where the secret lies.

The chaff hives made by the different firms are all right provided there is sufficient packing of the right material on the top. My argument is that they must be packed so warm that the moisture will not condense—so warm that the bees can move to any part of the hive without any danger of being caught in a "blizzard;" so warm that they just laugh when they hear the winds blow with the temperature going down below zero. But some will say, "Pack your

bees so very close, and there will be no upward ventilation, and the hives will become damp, and the combs will become moldy, and the bees diseased; and, as a result, they will come out in bad condition in the spring."

It occurs to me that this bad state of things which some seem to fear is not the result of close packing and warm hives, but the result of loose packing, too much cold, and *too much* upward ventilation. Absorbents are all right if warm. However, the only absorbent that I use is the propolized canvas, flat on the frames, and then two thicknesses of heavy building-paper, and then a large chaff cushion, loose chaff or forest leaves, as the case may be, then the three hive-covers on top with the tight cover to the winter box, which completes the job.

With my present method, if I wish to examine any bees in the middle of the winter or any other time I find them clustered between the frames dry and warm and contented, and they smilingly look up into my face and seem to thank me for my extra care in providing for their wants. If the weather is suitable for them to take a winter flight, they are ready to improve it. But allow me to say that they do not especially need it. I doubt very much whether, packed this way or not, they consume any more food than when placed in the cellar.

While the common chaff hive is good enough if warmly packed, I prefer my winter cases, for I can make them warmer, and they warm up much better in the spring and hold the same temperature in spite of the changes of weather. It has been argued that so much bulk of packing is detrimental; that the rays of the sun can not penetrate; that the hives remain cold, and that brood-rearing is retarded. I think this is somewhat imaginary, and I am quite sure that, with my way of packing, it is contrary to my experience. The continuous warmth of three colonies stored up and held under tight covers is far more potent than the fickle rays of the sun; and the real fact is that the whole body of chaff is warmed and remains so.

The most of my hives are $\frac{3}{4}$ inch deeper than the standard L., making the frame just 10 inches from top to bottom. I think it is true that this deeper hive will generate more heat than a more shallow one. I run my bees for comb honey, and I like this deeper frame. It gives me more depth of brood and more bees, and it is bees that make honey.

The whole surplus energy and warmth and odor from this deeper and more populous hive flows up into the super above, warming the sections and the foundation, so that I have very little trouble in forcing bees into the sections. There is such an upward push that they *must* go above.

My first bee-keeping was with the old King hive, forty years ago. The frames were 12 inches deep. The surplus boxes for comb honey were 4 inches in depth, covering the whole top of the hive with glass in each end, with two or more auger-holes in top and bottom for bees to enter, and without comb

foundation or sections or any of the modern helps. We have often secured over 100 lbs. of comb honey per colony, spring count. At that time we knew nothing of the many devices to control swarming. Some of these plans are practical and of great value; but any plan that will interfere with the natural working condition of the hive is harmful.

One thing is sure—that bees in good working order, left to their own sweet choice, will swarm. We may argue the question with them or try to persuade them to postpone the job with our non-swarming devices, but for all this convincing argument—

They have the same opinion still,

For swarm they must and swarm they will.

Well, I like to see them swarm—it is a sign of prosperity. They are satisfied. They think they have started in house-keeping anew, and they work all the better. If we manage them right we shall get just as much surplus honey with no increase, unless we desire it.

Hillsdale, Mich., March 11.

[What our correspondent has to say on the subject is, in the main, orthodox according to our experience. I would add, however, that sealed covers are better than absorbents, as a rule. When there is only a porous covering between the packing-material and the bees, the former is liable to become wet, and, in a very cold spell, freeze. It is then but little better than a cake of ice. We found that our bees seemed to average better with a thin board cover which they may seal down. Enamel cloth, or an old carpet thickly coated with propolis, is almost as good. Our correspondent uses practically a sealed cover, and therein is a part of the secret of his success. When he puts an abundance of packing-material all around, and especially on top, he supplies another important factor in the problem. But there is one thing upon which he is silent. He does not say any thing about restricting the size of the entrance. The smaller the entrance the better, providing it is always kept clear of dead bees. An entrance 4 in. wide and $\frac{1}{4}$ deep we have found to be quite sufficient. This will usually keep reasonably clear. I should prefer an entrance only one inch wide, but there is a liability that the bees will clog it up. Hay or straw piled over the entrance during the coldest weather is all right providing the snow does not melt and then freeze up, sealing the entrance. That is the experience we had late last spring; and such colonies did not do as well as those that had no straw at all.

Any chaff hive sold by manufacturers can be made to winter bees except where the mercury remains below zero for any length of time; but the looser the packing-material the more of it should be used. We use a tray five inches deep filled with planer-shavings. These lie directly on top of a tin super-cover which the bees have hermetically sealed with propolis. A cover telescopes over the whole, making the hive warm and tight.—ED.]

THE FINDING OF QUEEN-CELLS.

Something about Clipping Queens.

BY F. GREINER.

In your comments to the article of Mr. F. H. Cyrenius, on pages 774, 775, you say that the described method of finding queen-cells is practicable only with double-deckers. It is, perhaps, true that more queen-cells are started in the center of the brood-nest of the double-deckers than at the lower edges of combs in single-story brood-nests; but I wish to say that I have been quite successful in spotting all such colonies as showed signs of swarming the past season in my two outyards by the Cyrenius method, although almost all my colonies were on one

set of combs and deep frames at that. My frames are 11 inches deep, with bottom-bars only $\frac{1}{2}$ to $\frac{3}{4}$ inch in width. Not all queen-cells are started at the lower edge of the combs, but nearly always a sufficient number of them to inform us of the intentions of a colony. If colonies always waited till the queen-cells were sealed before swarming I would have made no misses. But this is not always so, and so there will be some swarming in the outyards.

No extensive bee-keeper can nowadays afford *not to clip queens*; and when they are clipped they may get lost in the several attempts made to swarm; but the bees are saved, and we find out the state of things when we make the next examination. There will then be a certain uncertainty as to



FRIEDMANN GREINER IN THE ACT OF CLIPPING A QUEEN WHILE ON THE COMB.

whether a queen is present or not, unless we find the queen. If we do not find her she may be there even then, or she may not. In this case we may not know just what is best to do. If we make a brushed swarm, and she has been lost, the labor is lost and we make a failure. By placing an entrance-guard over the hive, and shaking all bees in front of the hive, we find the queen if one is present. If we find none we may conclude the queen is lost, and we shall do better to give back the brood-combs with a ripe cell if we have one. All other cells must be cut. This is not absolutely a safe way as long as young brood is present from which other cells may be started; but in handling many colonies we have to take some of these risks.

I am not sure that I have before mentioned that, in clipping queens, I very seldom touch one with my fingers. I find that a curved pair of scissors does the work very nicely. With it I clip the queens as they move about among the bees on the combs. When doing this I usually rest one corner of the frame on the hive, as shown in the photo,

Naples, N. Y.

hands. I got 19 fine cells built from 20 that were grafted—9 with larvæ and royal jelly, and 10 with larvæ—into dry cups, but I had to make three grafts to get the latter during 38 hours. I got accepted first, 2; second, 4; third, 4; and they were larger cells than those in which royal jelly was first used.

Photo No. 2 is my wax-press. It is a \$4.50 lard-press. The perforated steel and shield on the left is what comes with it for pressing lard. The wooden iron-bound tub with skeleton bottom and follower, all slatted, are what I made for pressing out the wax. A burlap is spread over and pushed down into the tub. The hot water and wax are poured from the old brass kettle into it. Tin sap-buckets are used to catch the wax and water as they come from the press. They are beveled, and the cake of wax comes out readily. One of them stands in front of the press; also a larger cake of wax and some 3-oz. ones. They were molded into egg-dishes like the one in front of the wax, and sold from house to house for 10 cts. each. Almost every lady bought one to lubricate the flat irons. As I had such a small amount of wax it would not pay me to send it away to market.



BOARDMAN'S SHADY RETREAT, WITH THE BEE-YARD AND WINTER REPOSITORY IN THE BACKGROUND. SEE PAGE 961.

THE SWARTHMORE QUEEN-REARING SYSTEM.

A Lard-press for a Wax-extractor. See p. 938.

BY PERCY ORTON.

I am sending you some photos. If you can use them, do so. No. 1 is a hive-super, and frame of sealed Swarthmore cups, of which there are eight. The top-bar is $\frac{1}{8}$ inch thick; if thicker the bees will attach the cups to the under side of the top-bar, and when you wish to remove them you will twist off the cell. I had to trim off the miniature combs on the cells before removing. I consider the Swarthmore cups the most practical of any used in queen-rearing, because I can remove them for examination, without the use of a smoker, and with bare

Before closing I wish to say Mr. E. R. Root is right when he says, "You can't get over 50 per cent until you use a press for your wax." And I want to say that, when you get a press, buy a German. They are neater, and can be used on the kitchen stove; they make a fine uncapping-can or honey-press, and will be the most satisfactory in the end. I will trade my outfit for one if I ever get a chance.

Northampton, N. Y., Aug. 9.

[Then we understand that you get far better results by using a little royal jelly, and each cell grafted, than to attempt to get along without. That has been our experience, although I am satisfied Swarthmore succeeds in grafting without the royal jelly.]

Before we put out the German wax-press we tried a great number of different styles;

but after a long series of experiments we came to the conclusion that, in the hands of the average person at least, wax squeezed out in the open air, even though the refuse was taken immediately out of boiling water, was liable to chill, with the result that the cheese would not give up all the wax in it. But when the cheese is confined in hot water or hot steam during the operation of squeezing, then every particle of wax may be secured. While an open-air press can be made a good deal cheaper, and while the lard-press, such as is here shown, is far better than no press at all, yet the loss through the chilling of the cheese during the process of squeezing is enough in a very short time to pay the difference in the cost of an inclosed press. The German bee-keepers have been over this ground very thoroughly—many

years, in fact, before the American bee-keepers came to adopt pressure in rendering wax. Indeed, our press, with some slight modifications, is modeled after the German presses so successfully used on the other side of the water—hence the name.—Ed.]

NON-SWARMING A HONEY-GETTER.

Two Full Colonies Used to Supplement the Working Force.

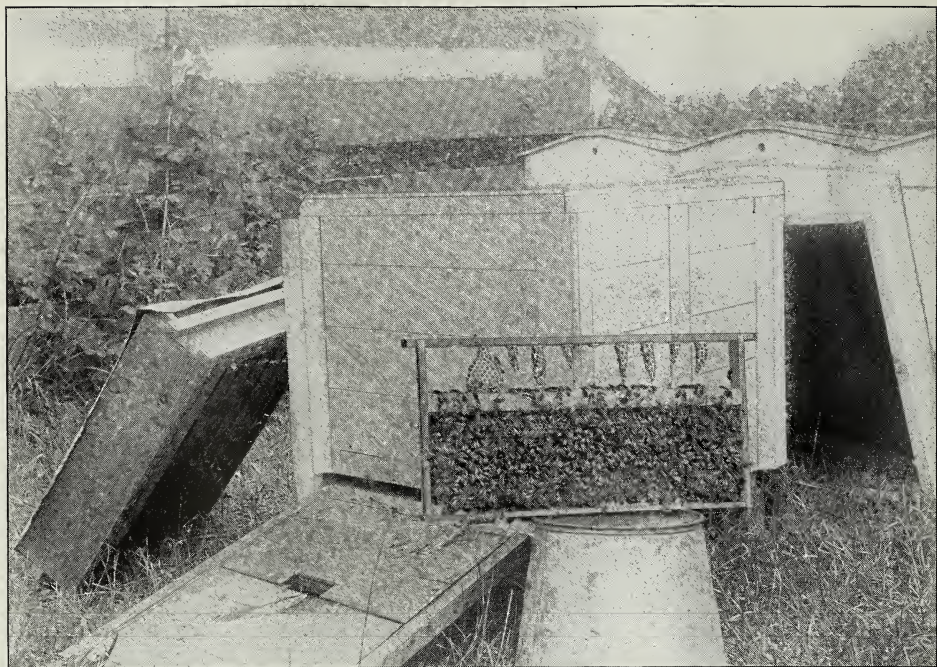
BY DR. J. W. GUYTON.

As the editor calls for reports on the non-swarming plan I will try to accommodate him with my experiment.

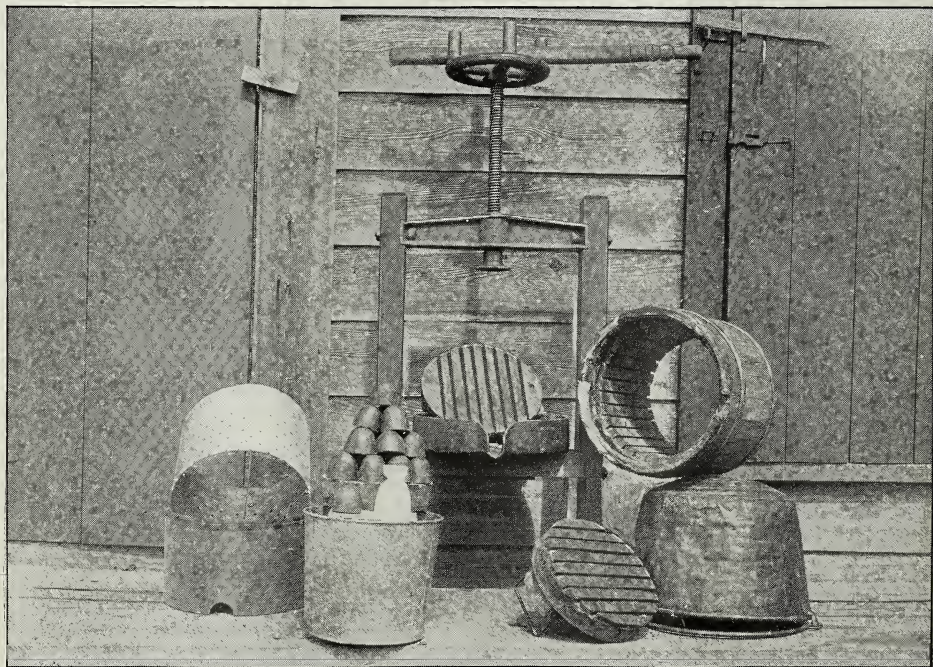
To begin with, I will designate my working plan by numbering my working hives 1,



H. R. BOARDMAN AND LITTLE DAUGHTER AT HOME. SEE PAGE 961.



QUEEN-CELLS A LA SWARTHMORE. PHOTO BY PERCY ORTON, NORTHAMPTON, N. Y. SEE P. 966.



A \$4.50 LARD PRESS CONVERTED INTO A WAX-PRESS. SEE P. 966.

2, 3, and the stands as A, B, C. Nos. 1 and 3 are hives that are preparing to issue a swarm. I found upon examination that No. 1 had queen-cells started, although not so populous as No. 3. I took an empty hive (eight frames all of them) with foundation starters, and set it on stand B. I also took a comb of brood and bees with a queen-cell from No. 1, and set it in the center of hive No. 2, on stand B. A little before sundown I set No. 1 on top of No. 2, with the entrance turned in the opposite direction. By removing the hive at this time of day I did not get the full force of workers in No. 2, as might be expected, but what I did catch were ready for work the next morning, seemingly satisfied with the change. I will say that I had previously brought these two colonies of bees close together by moving each every few days until I had them within about three feet of each other. The bees were not molested so very much after the third day. On the fifth day I set No. 1 back on its old stand, and put No. 3 on top of a super on No. 2, with the entrance turned the same way as No. 2. Most of the bees entered No. 2. I had also raised the hive of No. 2 at the rear, so the bees from No. 1 could more easily find their way in.

After another five days I set No. 1 on stand C, and five days later I put No. 3 on stand A, and in five days more I put No. 1 on top of No. 2 again. All of these changes were made about sundown. This was done to keep so many bees from entering at once. The returning field bees, loaded with nectar and pollen, are always accepted, and will not ball the queen when they are in the minority, as they will always be when manipulated at or just before sunset. They will also acquire the scent of the colony during the night, and will go to work the next morning as though they had kept house with their mother the previous night.

The honey-flow (horsemint) was light, but this worked very well with those two colonies. The brood-combs were all well built, and the 24 sections nearly all well filled. This was so much better than any other three colonies that did not issue a swarm that I decided it a success.

The two old colonies did not issue a swarm. I suppose No. 1 must have destroyed their queen-cells and given up the idea of swarming. This is reasonable, as they were losing their field forces every five days. They could only think a dearth of honey was on hand, and not bees enough left to swarm out.

I believe the above plan infinitely superior to the brush-swarm plan, as it saves handling combs so much; besides, the brush-shook plan entails numerous stings at times, besides almost depopulating the parent colonies. With eight-frame hives I think my plan will work more satisfactorily; but with a ten-frame hive and a very populous colony the Sibbald plan may work all right.

To introduce a prolific queen to the new-made colony I fear would take up too much time with the bees in rearing brood to get the best results in the super. However,

this would work satisfactorily in some localities where the honey-flow lasts all day and for a few weeks. In fact, bees will do well in any locality under almost any system of management where there is a continuous flow of nectar. As I understand the Sibbald idea he wants to curtail the swarming impulse and get honey instead.

In conclusion I will recommend to those who wish to try to keep two hives from issuing swarms to arrange your two nearest strong colonies in pairs about three feet apart. Bring them together gradually a few inches every three or four days. After the made swarm begins to hatch its own brood, and is equal to the other two in numbers, you need not exchange places any more, but, instead, put supers on the old colonies, and in a long honey-flow you may raise the super on the new hive and set a new one under it. I like the idea of putting shallow extracting combs at the sides of the sections. This I will try soon.

Levita, Texas.



CRATING HONEY.

"Get much honey this year, Doolittle?"

"Not an average crop of white honey. In fact, the season has been the poorest for some years all through this section, so far as I can find out. We may get some buckwheat honey, if the weather turns good soon, though the acreage is not up to the usual amount."

"I find that is about the case with the most of the bee-keepers in Central New York; at least I have heard of no yields above the average. I have a crop of about fifty pounds to the colony, spring count, and I came to have a little talk with you about how I shall put up this honey for market."

"You wish to know how I sort honey or grade it, I suppose. I use the X plan, putting XXX for fancy, XX for No. 1, and one X for the rest, unless quite poor."

"Yes, I have read what you have written regarding the using of X's in sorting honey, and it is not just that which I wish to know about. It is whether you put any thing but fancy in a crate. In other words, do you mix fancy and No. 1 in the same case?"

"No, I do not. Why do you ask this?"

"Because an old bee-keeper told me that I could not get any more for my fancy honey crated by itself than I could for the whole were I to crate fancy and No. 1 together. He says that, after the commission merchant has sold the fancy, he will sell the No. 1 at a less figure."

"That is just my experience, where both

fancy and No. 1 are shipped to the same commission house; but ship the fancy to one house and the No. 1 to another house, or to a different city, and No. 1 often sells for as much as fancy."

"Why should that be?"

"For the reason that most persons can not carry the difference between the two in the eye twenty feet, or when going from one building to another. What I mean is this: The average judge of comb honey, looking at XXX honey in one building, and then going two rods to another building and looking at XX or No. 1 honey, will, upon close questioning, tell you, when he gets through beating around the bush, that he sees very little difference between the two lots."

"That is a point I had not thought of; but I guess you are right, for I had some No. 1 honey crated in the house, and some fancy in the shop. I was praising that in the shop to my wife, and she said she did not see why I was making such a fuss about that shop honey, for that in the house looked just as good."

"That is just as I find it; and more—face one side of a crate with fancy honey and the other with No. 1, and ask the ordinary man which of the two sides is the nicer, and you will see him step first from one side to the other, then back again, then to the first side again, then back once more, when he will tell you he sees very little if any difference. But you place a crate of fancy and a crate of No. 1 honey side by side, or one on top of the other, and any ordinary person will tell you that the fancy looks the nicer."

"And I guess you are right again."

"Yes; and why the No. 1 does not sell as well as the fancy, where both are shipped to one commission house, is because the commission man sees the two side by side, and forms the opinion that No. 1 is not as good as the fancy, and so, after the fancy is sold, he tells his customers he has been selling fancy at 15 cents, but he has some on hand that is not quite as good, and he will take 13 for it. When he makes such an admission the purchaser takes advantage of it, so offers him 11 or 12 cents, and generally gets it at his own price."

"I see. Then you don't ship all your honey to the same party?"

"Not now. Years of experience taught me better than to ship both fancy and No. 1 to the same man; so I now ship the XXX to one party and the XX to another; and fifteen or twenty years of this has proven that, more often than otherwise, the XX brings fully as much as the XXX."

"Well, if such is the case why not put the No. 1 and fancy together, and face the crate with the fancy, as the old bee-keeper said was the best way?"

"I should hardly think that the best way, though I know that the bee-keepers of a quarter of a century ago did that way. Every case of honey should be so crated that it would give a fair representation from the outside of what the whole was."

"But do you not face at all?"

"When at a bee convention some years ago a certain man asked all those who put the poorest sections next the glass on the case to hold up their hands, but not a hand went up."

"I should not expect there would. How do you do?"

"After sorting my honey very carefully, seeing that no section of a lower grade is in a higher one, I take the number of sections of any special grade which a crate will hold to the cleaning-block, and, after cleaning one, I look at the two sides of that certain section, and then place the smoother side next the glass. But I never allow a single section of XX honey to go into a XXX crate, much less an X section."

"But suppose you were to put fancy and No. 1 honey in the same crate, as the old bee-keeper told me to do, how would you do it?"

"I would not do it."

"But suppose I did it, how should it be done?"

"The only way to do this, if you think *you* must do it, would be to put the half of the crate on one side with fancy honey and the half on the other side of No. 1."

"And if I did this, the ordinary commission man, or the one purchasing the honey, would not be likely to see any difference between the two sides, according to your experience in the past in having the average person look from side to side of the crate."

"Now, that is one way to get back at me. Allow me a question."

"Certainly."

"What would there be in the way of the commission man or the purchaser setting the No. 1 side of one crate and the fancy side of another toward him, or half a dozen of each, did you ship him that many?"

"I am off now. Good by."



PARTICULARS WANTED CONCERNING THE SWARTHMORE OUTFITS; IDEAL SECTIONS USED FOR FRAMES IN BABY NUCLEI.

I should like to have full particulars regarding the Swarthmore outfit. Have you a book describing the outfit, telling what each part is for and how used? I do not understand them by name. I have one of your outfits, and like it very much. I am using the Ideal section, two in a box, for baby nuclei, and get every queen mated without any brood. I place the sections in half-depth wide frames spaced $\frac{1}{4}$ inch apart in super (no separators) placed on 12-frame L. hives. I

get them filled easily with honey, and some brood if I should want it. They hold more honey than your little frames, which is my main reason for using them. One full section, one empty one, and $\frac{1}{2}$ pint of bees, make up a perfect combination for mating queens. It makes a square box, or a little taller than square, which gives them comfort on cool nights, and I find them out as early on cool mornings as the standard-sized colonies.

You may say that the combs are too thick for brood-combs, and spaced too far apart ($1\frac{1}{2}$ inch. from center to center when sections are spaced $\frac{1}{2}$ apart). It makes no difference in these little boxes, for the bees shave the combs down to the proper thickness for brood-combs, except that part which contains honey. This leaves a wide space between the combs, while the wood of the section nearly closes around them, hence more warmth.

I fasten the sections on the lid similar to those in your box; but instead of using staples I use little wire nails of the right size, driven through from the outside of the lid, and then bent over with pliers. I put two in the center of the cover to hold the section, and one at each end also, bent over so you can turn it to or from the section, which fastens or releases it. This works finely, and gives permanency in handling, which the staple does not give. Those who use sections can make their own little boxes to fit, and use their unfinished unsalable sections to mate queens, and thus save that which might be lost.

SAM KING.

Raleigh, N. C., June 30.

[We can furnish Swarthmore's complete outfits, as well as the books for the same.—ED.]

IS AN EARLY-BLOOMING BASSWOOD-TREE A RARITY? AND IF SO, WOULD IT BE AN ACQUISITION?

I am sending you some basswood-blossoms which I picked from a perfectly healthy and thrifty tree this evening, July 25. I also enclose some seeds from another tree which grows about three blocks from the one which is in full bloom. This is to show the difference in the time of bloom of the two trees. All the basswoods, except this one, in this section, so far as I have observed, are entirely out of bloom, and have been for at least a week or ten days.

I should like to know if, in your opinion, this late-blooming tree would be worth propagation. I could probably receive the seeds this fall; and as I have had some experience in grafting and budding I think that, perhaps, I could get the real thing with grafts and buds.

The tree stands in my daughter's front yard, and I can see nothing in its environment which would tend to make it blossom later than other trees in its immediate neighborhood. My daughter and her husband say the tree has for the last three years (the time which they have lived in

this place) been the subject of remark by themselves and neighbors on account of its leaving out so late in the spring, some thinking it must be dead.

I should be pleased to know if, in your opinion, it would be of special value to beekeepers on account of its late blooming, and also if it would be possible to sell budded or grafted trees at a higher price than ordinary basswoods sell for. The tree is located in Albert Lea, Minn. G. W. PETRIE.

Fairmont, Minn.

[The case you refer to is not an unusual one. We have trees right in our own vicinity that will blossom some three weeks ahead of other trees. A good deal depends upon location, the age of the tree, the soil, and the watering, as to how early the tree will blossom. It is, nevertheless, a fact that some trees in the same location will bloom earlier than others.—ED.]

A CHEAP AND STRONG HIVE-STAND; IS AN OPEN SHED A GOOD PLACE TO WINTER BEES?

I give you plans of the hive-stands I use. They are better, I think, and easier to set than stakes. I use native black-oak boards for end-pieces one inch thick, 8 wide, by 15 long. The middle piece is about 6 in. wide by 15. These are nailed in this shape: **H**. This makes a good cheap stand. The two end-pieces fit under the entrance and back of the hive.

I have been a subscriber to GLEANINGS for some time, and find it quite a help to me. I wish some of the writers would give a little more on natural swarming and comb honey, and doubling small swarms. Last winter I built an open shed 100 feet long and put my bees under it after the first snow, but found I had made a mistake after I had lost about a third of my bees. I have about ten acres of white and ten of alsike clover, and find the alsike makes good hay as well as bee pasture.

R. L. WEBB.

Waverly, Mo.

[It is hardly probable that the shed was the direct cause of the death of your bees. If the back of the shed was closed up (as most of such bee-sheds are), and faced the direction of the prevailing winds, it would really be a protection. Last winter was a severe one for most localities, and the probabilities are that the winter and not the shed was responsible for the loss. The expense of a shed will generally buy a full set of winter cases or chaff hives, and there is no question but that either of the latter would be far superior for outdoor wintering.—ED.]

HOW MUCH HONEY DOES A COLONY OF BEES CONSUME IN ONE YEAR?

Adrian Getaz, p. 531, puts the amount at 200 to 250 lbs. Now set over against this the fact that Mr. Doolittle and others can keep a colony about five months—Dec. 1 to

May 1—on less than 10 lbs. of honey; and another fact, that any time when bees can fly, and no honey can be gathered, if fed daily half to $\frac{3}{4}$ lb. of honey reduced to the consistency of nectar, that colony so treated will thrive, will be stimulated in brood-raising, and will increase slightly in weight.

In feeding back freely, is there not a waste which can not be fairly charged to keeping bees alive, furnishing heat, secreting wax, or raising brood?

Winsted, Ct. O. S. REXFORD.

[There is much in what you have to say, and I believe you are right. I should like to hear further from Mr. Getaz.—ED.]

WETTING BEE-BRUSHES TO KEEP FROM BEING STUNG.

Extracting generally three or four weeks after the flow has ceased, and there being no honey coming in at that time, I got pretty well stung; but last year I found a simple remedy—just wet the bee-brush before using it. The bees are rolled off on the ground, and very few attempt to take wing. After getting started I carried a pail of water with me while brushing off the bees, and I did not get a tenth of the stings that I got before.

GUSTAVE GROSS.

Dilly, Wis., July 19.

[Some bee-keepers regularly wet their bee-brushes when extracting. While it prevents stinging, it also keeps the brushes clean.—ED.]

WHAT MAKE OF BICYCLE TO GET.

What kind of bicycle would you advise a bee-keeper to get for hard service? What make? what grade? what weight? what gear? what kind of tire? what kind of brake, if any? What do you think of a coaster brake? I think a little article in GLEANINGS on these points would interest a good many bee-keepers.

W. T. CARY.

Wakenda, Mo.

[Most of the bicycles put out by the Pope Mfg. Co., with head offices at Hartford, Ct., and Chicago, Ill., are high grade, capable of standing hard service. This company makes some medium grades that are very fair. The Crescent, made at Chicago, is perhaps the best of the medium-priced machines. Among the high grades I would recommend the Columbia, the Rambler, and the Cleveland. These cost all the way from \$40 to \$75. I would advise you to have nothing to do with a bevel-gear drive machine of any make. Our experience with them has been decidedly unsatisfactory. While the gears wear well, they easily get out of alignment, and then consume power enormously. Better get the cheaper chain model with coaster brakes, a device that enables one to stop pedaling while going down grades, thus saving strength as well as general wear. If the country is a little rolling, one can run almost half the time

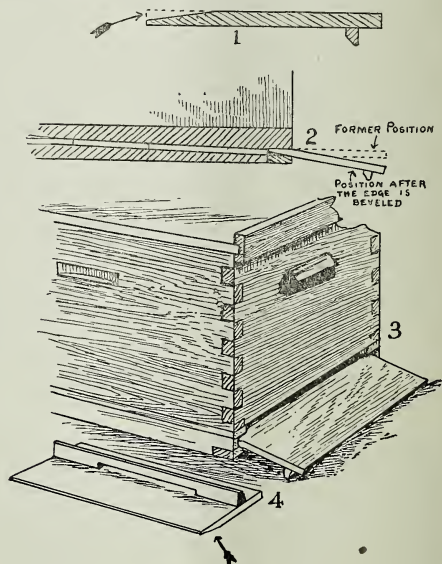
with the pedals still; and a high-grade bicycle, with slip gear and coaster brake, comes as near furnishing a sense of flying as any thing ever made to carry a human being.

While you can get \$15, \$16, and \$25 machines, the parts are not as carefully nor as well made. Better pay a little more money if you desire to run outyards, and save your pocketbook in the end as well as your muscles.

We often wonder why bee-keepers do not use bicycles more in going to outyards. W. L. Coggshall's men make a very large use of them. Where one desires to see only a few colonies in an outyard for only a few minutes the bicycle is next to the automobile, and a good bit cheaper.—ED.]

AN IMPROVEMENT ON THE DANZENBAKER BOTTOM-BOARD.

Fully one-third or more of the bees that take flight from the bottom of frames capsize and strike on their backs. I made a



bottom with the alighting-board slanting down from the inside bottom edge of the hive-board, and have never seen a bee strike on its back yet on this board except by collision with another bee. With the Danzenbaker reversible I set the bottom-board one inch back from the outside of the front of the hive. For full entrance I turn the cleat down and plane the edge intended to be the outer one on a bevel one inch back, and leave the edge $\frac{1}{8}$ thick; insert in grooves with beveled side up and it will give a good slant down as in the diagram.

GEO. HILDRETH.

[While some bees alight on their backs, the proportion in our experience is not nearly so great as you speak of.—ED.]



WHAT SHALL WE DO WHEN WE DO NOT FEEL WELL?

Perhaps I had better put my heading to read like this: "What is the best thing for old people to do when they feel that their powers of mind and body are giving way?" Of course, we must expect to fail sooner or later, and die; but we all know, I think, from past experience, that our strength and vigor of mind and body depend very much on how we take care of ourselves. Of course, this is a question I have discussed again and again, dear friends; and I think I have prayed oftener that God would guide me in this matter of caring for myself and advising others than for almost any other one thing. I have quoted many Bible texts on the subject; and it seems pretty evident that even devoted Christians do not interpret Bible promises exactly in the same way. Even if not all physicians are godly men, they are as a whole a benefit to humanity; and I think we may safely thank God for our intelligent and up-to-date family doctors. They are having a pretty severe time of it just now with yellow fever in New Orleans and vicinity; but I have said all along that they will eventually prevail, and stamp it out as they have done in Cuba and some other places. The yellow fever, typhoid fever, diphtheria, and other contagious maladies, are at least largely the result of negligence in regard to sanitary measures. But now, if you please, let us get down to business — the business I have in mind at least.

During the months of July and August, of late years I usually have a tussle with my old trouble, malarial fever. I generally have a warning of its coming by a lack of circulation, indigestion, etc. Some time in July a postal card came through the mails with something like this on it:

"Are you in good health? Is your body throwing off and disposing of the refuse matter through the kidneys, pores, etc., as it should do? Are you getting in the condition of a dwelling when the drainage-pipes and the sewage are clogged up so poisonous matters are getting into your blood, clogging the circulation, nutrition, etc.? If so, we should be glad to explain to you what we are able to do for people in your condition, especially elderly people."

I sent for further particulars, and found the institution was a nicely arranged sanitarium; but the expense of treatment was from \$18 to \$40 a week, besides a fee to start with of \$10 to the corps of doctors whose business it is to look patients over and make a diagnosis. Now, I am not writing up a humbug institution. I believe this establishment, fully equipped as it is, is doing a good work for humanity. I meditated

paying them a visit just to see what they could do. I prayed over the matter. Was it God's will that I should seek for health along this line? If they could do all they claimed, I should want to write it up for GLEANINGS; and then the question came up, and I prayed over it some more. Even if I should receive such health as I might expect at my age, would it be just the thing here on these pages to advise others to go to that institution or a similar one? It did not seem to me that it would. If I am blest in my search for health I want it to be along some line in which I can ask all my friends to follow me. If it is where they can not consistently follow, I do not know but I should prefer ill health with the rest of humanity — that is, if it is God's will.

I presume the above confession will be the means of deluging me with a lot of circulars and letters from friends who have been cured — from Christian Scientists, Ralstonites, and a thousand others. Although I have spent a good deal of time in investigating these things I do not feel satisfied with any of them. They may be right, but God has not called me to indorse or accept them. What *he* pointed out, as nearly as I could make out, was to go back to the "cabin in the woods" where I have so many times found health and happiness and a revival of the Holy Spirit in my heart — at least I think I am stating it fairly when I say so.

We did not get up to the cabin in the woods until the last of July. It usually takes me a week or even two weeks after I get there to enable me to begin to feel like a boy again. This last trip was no exception. As we had no horse and buggy, no automobile, and not even a bicycle that was of much practical use through the sand and over the hills, I was compelled to go on foot. For several days I got so tired in climbing hills I really would have meditated going back to Ohio had it not been for the memory of other experiences. Pretty soon I made a discovery. I have been making them all my life; and may God be praised for the happy surprises he has given me along this line. My discovery was a plan by which I could climb the highest hills and *get rested* instead of becoming tired. You may laugh at it; and, to tell the truth, I am not sure it will work with everybody, but I think it will be all right if you will only persevere. I want a lot of you to test it and let me know about it.

When you climb a long hill on foot you soon begin to pant for breath, or to breathe hard, perhaps I should say. Now, do not give up just because you feel tired. Keep right on climbing hills, but walk slower, and encourage as much as possible nature's demand for more oxygen. Draw in a great lot of air. Swell your lungs out away beyond their natural capacity during ordinary breathing. Let the air out slowly, then take another big long breath. Stand still during a breath or two if you choose, but do not stop very long. Keep going so as to

keep up this long deep breathing. You want to breathe as one does when asleep. Just watch such a person take a long breath and rest a little, and then take in another breath. That is the kind of sleep that gives one strength and energy, especially if he has a window open, or, better still, is sleeping outdoors.* If your hill is long enough, and you go to work deliberately in filling your lungs repeatedly to an unusual extent, the climbing will eventually begin to give you new vigor and energy. Before you get to the top of the hill you will feel an exhilaration and inspiration caused by the unusual quantity of oxygen. T. B. Terry and others have advised this long deep breathing without climbing a hill. I have tried it, but it does not work with me. It makes me dizzy. There has got to be exercise enough of some kind to *call* for this extra amount of oxygen; then when the blood is throbbing and going with great leaps it takes up the oxygen and assimilates it. Of course, I am touching on a matter I talked about in riding the bicycle—second wind; and you can get this precious second wind in a good many different ways. Perhaps this peculiar climate and pure air around Grand Traverse Bay may have something to do with it. The freedom of that locality from malaria has, no doubt, much to do with it in my case; but I think it will work, at least to some extent, everywhere.

Now, after such hill-climbing, say for a whole forenoon, with the pleasant visits now and then with the neighbors, you will have a good appetite, and an extra dose of oxygen will be an amazing help to more perfect digestion. I do not believe, however, that aimless climbing of hills will do very much good. You should have some errand. Go to the postoffice or to the depot. If you are out in the woods, go to the neighbors for butter, milk, and eggs. If you climb some more after dinner it will do you more good. Pretty soon you can add fruit to your *menu*, and it will digest all right and not make you sick, even if it is hot weather.

One thing more, you must not be cumbered by a great lot of useless clothing. One of our first visits was through the woods, on Mrs. Root's "avenue," as we call it. It is not much of an avenue, for it is an awful crooked trail around great logs, stumps, and impenetrable brush, up and down ravines and canyons. At the end of this trip I

found our nearest neighbor was at work in the field, with no garment over his chest and arms except a very thin undershirt. Mrs. Root said she felt troubled right away, for she knew I would jump at the idea of dispensing with all useless clothing in the month of August. Off went my shirt when I got home, and it was off every warm day when I had work to do. With thin pants, light shoes, and a hat that was almost no hat at all except that it kept off the sun, I was ready for climbing hills all day long—at least after my strength came.

At different times in the past we have heard very much about air baths. With my light clothing I could have almost as much of an air bath as if I had no clothing at all, especially while I was at work in the woods. But the air bath was not all of it. The culmination of my emancipation from all my ills, and the stagnation in my circulation, came about by a little incident that I am going to describe minutely. I have used a lot of big words in the sentence above, I know; but they hit the spot so exactly I will let them stay there.

When we first came on the place, some three or four years ago, I bought a hydraulic ram to carry the water from a spring up to our cabin. But when we laid the iron pipes it brought it so near the cabin the ram was never used. One hot day in this present August I thought I would hitch it to the water-pipes just to see how it worked. It did the work beautifully, sending quite a stream of water up into the tree-tops. I could not attach it just then so as to send the water clear into the kitchen, because of a lack of tools and attachments—at least I thought I could not. But next day I began studying over a plan by which I could install the apparatus without any tools for threading pipe. As you may be in a similar predicament some time I will tell you what I did. The ram was to be attached to the water-pipe where it passed through the lowest ground. In order to get the pipes apart to make room for it I uncovered the coupling in four different places. With my pipe-tongs and wrench I started each one of the four joints, and then screwed two of them as far as I could in one direction, and the other two as far as the threading would permit in the other direction. This permitted the coupling to be taken apart in the middle. Screwing the attachment to the ram on to one section of pipe was an easy matter. To attach the other I hunted up all the short pieces of pipe, both three-fourths and one inch, I had on the premises. By screwing these pieces together, going back of the ram and then forward by means of a double elbow, I made the connection. While doing the work I was full of enthusiasm in seeing what I could do without proper tools and appurtenances. It was right in the middle of the day, and I was at work in the hot sun. As I was alone in the woods every bit of clothing was taken off that was not needed. I got into a profuse perspiration. The sweat was dripping from the end of my nose, and when I got

* Mrs. Root and I both have been much troubled by a lack of ventilation, especially in warm weather, when we attend church, particularly if the church is filled as every church ought to be. Ventilation is at present very inadequate for schools, churches, and other places where crowds of people gather. Mrs. Root has gone so far as to declare she would have to give up attending church, especially in the evening, unless we could have better ventilation. Well, I rejoice to tell you that, during the past summer, we have been having union meetings of all the churches in the park. The audiences are very much larger than can be secured in the churches, and I greatly enjoy the services. The young minister who spoke last Sunday evening remarked that it was a special inspiration to him, and he hoped it would be to his audience, to know that no "shingles" intervened between us and God's stars overhead. Let us do all we can to have more outdoor preaching.

through I found it was oozing out from almost every pore of my body.*

For some weeks back I had noticed that not only was there a bad odor to my breath, but in spite of repeated bathings I did not smell sweet and clean as a person in good health ought to smell. Well, this profuse perspiration actually had a bad smell. I hope you will excuse me, friends, for talking plainly, for I am touching on a vital point. Old people can, if they care enough about it, smell as sweet and clean as a babe, or at least pretty nearly so. When I was in Cuba during the extremely hot weather, I mentioned that my perspiration seemed to be sticky or glutinous, and gave off a bad odor until I got entirely free from it by using a shower bath every day or twice a day. When I noticed that peculiar glutinous perspiration that seemed coming out all over my body at the time in question, I began to think of a shower bath. I went back in the woods where my celery garden used to be, pulled a plug out of one of the large pipes, and the water instantly shot clear up into the branches of the trees overhead. It came out not only by the painful but by barrefuls. I knew this could not last, because it would exhaust the reservoir at the spring. But I thought it would last long enough for what I wanted it. When I first got under the shower bath I thought I could not stand it; but after a little I found it just delightful. I not only scrubbed my body with my hands, but I applied the full force of a stream that would rise twelve or fifteen feet high directly against every part of my body until I felt as if I had had a massage. Then I dried myself in the sun, and thanked God that it was possible to get such exhilaration without the use of any drug or stimulant. I thought *again* of that passage in the book of Job, where, in speaking of the horse, it says, "He paweth in the valley, and rejoiceth in his strength." After that I managed to do some kind of work that would get me into a profuse perspiration almost every day, following it up with a shower bath with force enough from the stream of water to give me a good pounding, and it worked wonders. May be the sanitariums have something as good; but my medicine did not cost two or three dollars a day for board and lodging, besides feeing doctors. It was God's air and God's water. I have been tempted, sometimes, to think that the water of the springs around Grand Traverse Bay has peculiar medical properties; but the probability is that almost any spring or other good water will do equally well.

Now, there is another factor I must not omit. During all of this "treatment" I

*I must not fail to add that the hydraulic ram does its work beautifully. I hitched on a rubber hose and then stood on the front doorstep and called Sue to see that my apparatus threw the water up higher than the doorway and higher than I could reach. Then I added, "Why, I can pour a stream of water right down the chimney of the house if you want it."

"No, no, dear husband. Don't pour any water down the chimney, for mercy's sake, for I have had enough work to get this little stove to draw as it is. Not any water, thank you, in the chimney."

was attending revival meetings every evening, and getting my heart fuller and fuller of God's precious promises and of the comforting influences of the Holy Spirit. There may be other ways of giving old people glimpses of the fountain of perpetual youth besides those I have discovered away back there in the woods; and I have no disposition to quarrel with anybody nor to say my way is best; but the pure air and pure water I have spoken of are free to all. I can say to every one of you, "Ho, every one that thirsteth! come ye to the waters and drink."

Perhaps to be truthful I should say that, while up there in the woods attending meetings every evening, I did very little reading of any kind, and very little writing. As a consequence, when I got home a great lot of correspondence was piled up on my desk, to be answered. God did not intend these lives here on earth to be altogether selfish ones. Very likely there *are* times when the demands on our time and strength are such that we can not neglect life's duties long enough to enjoy the very best of health—that is, looking at it from a Christian standpoint.

Now, friends, don't you think my plan of "doctoring" is a pretty good one after all—at least for most people?



Ye have heard that it hath been said, An eye for an eye, and a tooth for a tooth; but I say unto you, That ye resist not evil; but whosoever shall smite thee on thy right cheek, turn to him the other also.—MATT. 5:38, 39.

In this Christian nation, and during this twentieth century, it does seem as if our people might get over the fashion of thinking it gentlemanly to knock a man down should he call you a liar, or to *shoot* a man down if he does certain things. If a midnight burglar arouses you from your slumbers, and demands your money or your life, I suppose the thing to do is to shoot him if you can. *This* is self-protection; for we well know that at least the average midnight burglar carries a revolver, and supposes everybody understands he shoots without mercy if you interfere in any way with his plan to rob you. You do not shoot him down exactly to save your money, but to save your life or the lives of those near and dear to you. If the circumstances are such that you have no good reason to think your own life is in danger I think I would let the midnight burglar take what he could find and get away, rather than take any risk. Circumstances would have to decide largely what is best to do. But even in such a case I would advise everybody to be slow about deciding to take a man's life.

A man whom I knew well found somebody was pilfering every little while from his

store. He lay awake with a loaded gun, saw the man come in with a dark-lantern, and then deliberately shot him dead. Then he found out that it was a poor neighbor of his. If I am correctly informed, this man never found such happiness in life after that, although the law exonerated him.

There is another phase of this matter still more serious. Friend Abbott, in the *Modern Farmer*, comments on it as follows:

LET THIS AWFUL TRAGEDY TEACH FATHERS AND MOTHERS A WHOLESOME LESSON.

Justice is sometimes swift and awful in the way it is administered, and there are times when men can make of themselves judge, jury, prosecutor, and executor in one, and still have the respect and approbation of the law-abiding citizens of the land. Such a case occurred in St. Joseph last month, when a married man committed a vile crime against the thirteen-year-old daughter of a farmer who lived about two miles east of the city. The man took the girl out for a buggy-ride, came back with her after dark, and then took her to the laundry-building where he and she worked, and spent the night there. When the father learned from the daughter what had happened, he came to the city, purchased a first-class revolver, went to the laundry, made sure he had the right man, and emptied the contents of his gun into the body of the offender, who died at once. He then went out and gave himself up to the officers of the law, calm and cool, making no attempt to cover up any thing he had done. He is now out on bail, some of our best citizens being on his bond, and plenty of others were just as anxious as these to do the same thing. What will be the final outcome of the affair we are not able to say at this time, neither are we fully prepared to say that he was fully justified in doing what he did. Suffice it to say at this point that the sympathy of almost the entire community is with the man who did the shooting, and there are probably very few fathers who under similar circumstances would not do the same thing he did; but there is *another* side to this affair about which very little has been said. This is our excuse and reason for mentioning the subject here. There is a side which should lie very close to the heart of every father and mother in this and all other communities—a side on which this father and every other father should ponder with prayerful seriousness, and see if he is entirely blameless. This father is strong and healthy, has a wife and three children, two of them being younger than the one mentioned above, has a small farm of rich productive land near a thrifty city, is possessed of other property, and is no doubt able to make a fairly good living for himself and family. We have no disposition to find fault or be a discordant note in this song of universal sympathy, but we want to introduce the *other* side by asking a few simple, plain, but pointed questions. Why should a thirteen-year-old girl from such a home come to St. Joseph to work in a laundry? Why was she not at home with her parents, or attending school? What were her father and mother thinking about when they let her go out from under their watchful care to be exposed to the endless chain of temptations which run rampant in every large city of the land? What did they expect in return for taking these awful chances? Only a mere pittance, not enough to board the girl in a respectable boarding-house, if she had been compelled to board instead of finding a home with her aunt. It is all right and proper for the children to be taught early in life to do their part toward keeping up the home, but they should learn this lesson at home, and not among strangers. We can not refrain from saying to fathers and mothers who have pleasant homes in the country, keep your girls at home if possible, and it is possible in most homes, until they have reached mature life. Give them a chance to do for themselves at home, and teach them to feel a sense of security and contentment there which they can not find in any other place, and then such a blight and sorrow as this will never overtake them or you. It seemed like putting it very strong, but a gentleman in Kansas City, who evidently felt deeply on the subject, said to the writer, "What right have parents to bring children into the world, and then at the tender age of thirteen turn them loose to be exposed to such awful temptations? Why," said he, "do they not keep them at home? I would work my finger-nails off before I would let a child of mine at that age go out to work in a laundry." I could not answer his question or meet his argument.

I wish to give a hearty amen to what friend Abbott has said, and then I want to add a little.

First, it is a good thing for a whole community to boil with righteous indignation when one who calls himself a man, and a married man at that, deliberately sets to work as in the above case to ruin a child. I admire the spirit that arouses a whole populace; but I deplore the lack of wisdom that directs any one person or a community to take the law into their own hands. This indignation should turn in the direction of enforcing the laws we have already, or to giving us laws that are still more severe.

Our older readers are pretty well posted in regard to the law regulating the "age of consent." But it is different in different States. It seems to me this is very unfortunate. I have not the tables at hand; but if my memory serves me right this age of consent of a girl runs all the way from 12 to 18 years of age. There is one State, and perhaps more, in the South that fixes the age of consent at 12. In other words, a girl who is over 12 years of age, and listens to some fiend in human form, has no redress by law, the State where she lives deciding that she is "old enough to know better." If I am correct, Missouri places the age of consent at 14. In that case the above-mentioned crime would come under this law, but I do not know just what the penalty is. Now, let these indignant people get to work and raise the age of consent, and then make the punishment the same as for murder if they think proper, especially where the child is so very young. It may be true that such a man is not fit to live; but for God's sake let the State in which he lives put him to death.

In our own State of Ohio, if I am correct, the age of consent is 16 years. In one of our States it is 18. One objection has been made to making it 18 all around; and that is, it would give vicious women below the age of 18 a chance to blackmail, etc. If this is true, there are two things to be done. One is to insist on having better environments and a better education to give all of our girls under 18. The other is to warn mankind, old and young. Let them know it is dangerous business to trifle with girls under the age of 18.

There are some queer ideas prevalent in regard to what is the proper thing to do under such circumstances. Many professors of religion—indeed, I do not know but I may say ministers of the gospel—are so thoughtless as to say that the man was justified in the case friend Abbott gives, and some go even further, and say he did just right. The father was in a terrible passion; in fact, we could hardly excuse him for being otherwise; but he should have called on his friends to advise him. No one should think of acting in such a matter when he is in such a rage; and under no circumstances should one think of taking life when he is in a frenzy. Even in the matter of self-protection it is dangerous business. Every little while the papers tell us of somebody

who shot a friend by mistake. In one case a friend crawled into a neighbor's house, which house was just like his own. He supposed he was going into his own room. When his folks went away they locked the house up. In the darkness of the night he made a mistake in the house, and his neighbor shot him dead. Similar cases come up every little while. When it comes to the matter of taking life, for God's sake, dear friends, go slow and be careful.

Every little while there are neighborhood quarrels. We do not need to go to Kentucky, necessarily, to look up feuds of long standing. Men have grudges against some of their fellow-men. I have had them myself. In a few instances it has been hard work for me to keep from saying in my heart, when I heard of such and such a man's death, "I am glad of it." Where a man has spent all his life in debauching and ruining humanity I do not know but it is right in God's sight to say "Thank God" when such a man dies a natural death; but when some person dies with whom you have had *personal* difficulty, one who has had a fair reputation with people generally, then beware how you rejoice because God has taken him away. The Bible tells us (I. John 3:15), "Whosoever hateth his brother is a murderer."

Somebody may say, "Mr. Root, you are finding fault with that father for avenging the ruin of his child. What would you recommend or what would you have done?" I will answer the question by mentioning a case that occurred a few days ago in the courts of Cleveland. A low-lived wretch insulted a beautiful young girl of about the age of the one mentioned above. She reported him to the police, and he was sentenced to a fine of \$25 and six months in the workhouse. During the trial two women were present with their children—the mother of the little girl who was insulted, and the other one was the wife of the man who was sentenced. This first mother, when she saw her neighbor was a poor woman with several children depending on the father's daily wages for support, her heart relented. In the presence of the culprit she went to the judge and begged that the sentence be suspended. She said to this guilty man, or wretch, perhaps I ought to call him, something like this:

"Sir, you are a stranger to me; but I feel sure you are sorry for what you have done; and while I find it a hard matter to forgive you for the wrong you have done my innocent child, for the sake of your perhaps innocent wife and children I am willing to forgive you; and I am sure that, since you have looked at this case from all points of view, since you have seen the trouble and distress that it has brought into *your own* home as well as mine, you will repent and ask God to forgive you if you have not already done so. For their sakes I am willing to beg that you be released to take care of your loved ones, for I feel sure you do love them, even in the face of what has happened."

The newspapers did not give the substance of her plea, but it was probably something in the line I have given above. Is not that the Christian way, or, better still, the Christ-like way? Do we not all honor and respect that noble woman? Now a word in regard to this man. In fact, there are a number of them in Cleveland. Every little while they are arrested for impure remarks to school-girls. When the names of them are given you will discover that most of them are foreigners. They have had bad bringing up. They have spent their time in saloons. Not only do saloons contaminate by the drink habit, but they are the hot-bed of foul stories, such as no man, especially a married man, should listen to for a moment. These vile and filthy stories are not entirely confined to saloons, but mostly so. Once in a while somebody commences to tell them in my presence, but I have never failed in stopping them. I have never yet failed, so far as I remember, in finding in the crowd some man who had manhood enough to stand by me and declare I was right. These foreigners who come to our shores need to be educated and looked after. We want to get them on "higher ground." Young boys should be watched to see that they do not get into the fashion of indulging in filthy talk. Professor Cook tells us a little story that I think I may repeat. At some great gathering they were offering toasts. One prominent man, as he held up his glass, said something that reflected on all woman-kind. Somebody else rose up instantly and said the brother probably referred to his own wife and daughters rather than to the wives and daughters of those who were present. The "brother" (?) jumped up with an oath on his lips, and was going to shoot the man who made insulting allusions about his women-folks; but a lot of others grabbed hold of him and told him to cool off a little and reflect that *he* was the one who threw out an insult that would include all the wives, mothers, and daughters of the others present.

The recent disgraceful newspaper reports in regard to the Taggart divorce trial in Wooster, O., reveal the awful condition of morals in at least some of our army posts. Several good Christian people have mentioned the fact that this Taggart divorce business is going to be an eye-opener in regard to the custom of army officers and the way in which they drag their wives down into the slums and filth—at least some of them. One witness testified that, even if it were true that Taggart drank until he had to be confined at times, he was not particularly worse than the rest of the officers. Another one said that, even if Mrs. Taggart did drink beer and whisky, and smoke cigarettes, she was not particularly worse than the wives of other "officers."

Now, with all this iniquity going on in our land, is it to be wondered at that occasionally a man gets into the Devil's clutches to such an extent that he is guilty of such sins as are mentioned at the head of this talk?

In one sense the man is to be pitied, because he lets Satan get hold of him.

Then I wish to emphasize what friend Abbott has so well said, that the parents of this girl were greatly at fault for letting this thing go on to its culmination, for it must have been the work of weeks and months if not years. Once more, how does it happen that this man's wife and relatives had no intimation of how he was wasting his time, to say nothing worse, and yet did nothing to stop it? Besides, the other hands in that factory must have noticed things—it is unavoidable. How about the boss or employer? Did he think there was no harm in this singular intimacy between a married man and a girl of 13? I myself have made several disturbances, and may God be praised that I happened around and noticed what was going on. I have made a fuss or a "row" when the greater part of my friends and neighbors said I was stirring up trouble needlessly. They said I had some old-fashioned puritanical notions about such things. They said that it was customary for men, out of courtesy, to bestow these simple attentions on even very young girls. My reply was, "All right; but let this man (I do know but I should call him rascal) show his courtesy and gallant ways to *all* woman-kind. What I complain of is that he singles out one particular young girl as the recipient of all his acts of gentility. I am glad to know that such men are being stopped.

In yesterday's daily we are told of a fellow who asked a couple of young girls where he could find a certain street. One of them told her companion that the man knew the street perfectly well. They crossed over to get away from him, but he crossed over too, and then they came back where they were first; and when he followed them again, one of the girls screamed. You may think she was foolish to make a fuss in an open street in regard to such a trifling matter; but a policeman who had spotted the man before this occurrence was standing where he could keep his eye on him; and just as the girl screamed the policeman had him by the back of the neck, and marched him off to the lockup. Now, it is perfectly right to ask anybody—man, woman, or child—to direct you when you are in a hurry in any town or city; but after you have done so, go straight about your business. If you follow the incident up by making it an excuse for scraping up a further acquaintance you ought to be arrested.

God grant that this zeal, or, better, mistaken zeal, to lynch people instead of waiting for the slow process of law, may be turned in the direction of nipping the whole piece of iniquity in the bud. Prevention is better than cure. If there is no *other* way to do away with lynching colored people in the Southern States, we had better ask our intelligent and God-fearing friends to unite with us in spotting these loose lewd colored men and boys who are hanging around, and have them shut up before they get far enough in their career of crime to commit

these outrages. Everybody should be on the alert to get hold of such characters, and have them cared for. Better have asylums and prisons especially for them, and have every one, black or white, who shows any tendency or disposition in that line shut up as a means of public safety. I think such a course would soon cure the evil; and by all means let the penalty of the law be administered by the *officers* of the law. If there must be a mob in order to have our laws administered, let this mob, or, better still, an assembly of law-abiding and God-fearing people, tell the officers of the law what they, the people, expect of them. And I do not know but it would be well to tell these low-down criminal lawyers who defend such wretches that your particular locality is not a healthy place for them.

In a recent case of this kind where a crazy mob pointed their guns at the sheriff, and told him to open the jail so they could get out a colored man and string him up, the brave sheriff replied to them something as follows:

"My friends, if you put this man to death whom I have in charge, you may get off with a light punishment, perhaps none at all; but if you shoot me, an officer of the law, because I insist on upholding the law, you will bring down the indignation, not only of our State, but of the whole country. I am defending our laws, and trying to defend the honor of the American flag. If you want to shoot *me* down, shoot! but you can not get this prisoner without walking over my dead body." They did not shoot. They dispersed and went home.

One thing more before closing. When that man found that his daughter had been outraged it seemed to him that nothing could ever satisfy until he could put a bullet through the offending neighbor; and may be he felt a little bit of pleasure in seeing the offender die before his eyes. But what then? When you get into a fight with a man it must be a struggle as to who shall kill the other. You think, and the world seems to think, that, if you come out ahead before he kills you, you have done a big thing. I am not so sure of it. I have got as much of a temper as anybody; but I know already what remorse is. If I were in a fight with a neighbor, a man who is not a highway assassin, and I should by my superior strength or agility kill him before he could succeed in killing me, I am inclined to think I should have the worst of the bargain. The remorse that would trouble me would be worse than death.

Another thing, you do not make a man any *better* by killing him. I do not know that you change his attitude of heart at all. He is not an antagonist any longer; he is gone; I confess we do not know exactly where nor to what extent, but he does not oppose you any longer. A friendly contest may be a pleasant thing. It may stir you both to greater activity and praiseworthy achievements; but who wants to see his opponent wiped off in an instant of time from

the face of the earth? May be a prize-fighter does, but I doubt it even then; and no good man wants to see his rival *utterly* extinguished, life and all. A Rockefeller, if we are correctly informed, may not care when his opponent is financially ruined; but I am not sure that even *this* is true. Now, when you kill a man you have not beaten him in a fair and square conflict. Suppose you and your neighbor were in a hot contest for some particular prize, say a thousand or ten thousand dollars. Would you like to see him killed by accident so that the prize might be yours? Surely not, if there is a spark of manhood about you; and a *hundred times* not if you have any thing of the Christlike spirit in your makeup.

Now, while we labor for the uplifting of humanity, shall we not listen to the words of the Savior when he spoke the words of our little text at the head of this reading?

MEDICINE ADVERTISEMENTS IN RELIGIOUS PAPERS, ETC.

The following, from the *Modern Farmer and Busy Bee*, sounds so much like our good Abbott that our readers might almost have guessed whom it was from, even had I not told:

A trade sheet has this bit of information: "The — Remedy Company, of New York, requests rates of religious papers." What business has a religious paper quoting rates for a remedy company of any kind? If people must be afflicted with the ad's of patent-medicine fakirs, for heaven's sake let us keep them out of our religious papers. If any paper on earth should bring to its readers the gospel of good cheer and help, it is the one that pretends to speak in the name of religion. We hear enough about our ailments in other papers without having the horrid descriptions such as are found in patent-medicine ad's of all sorts of diseases inflicted on us every week in a religious paper. We hope the time may come when all papers that contain such ad's will have to go a begging for subscribers. Do not read about your own ills or other people's, do not think about them, do not talk about them, but think bright, clean, healthy thoughts and you will not need to interest yourself in the advertisements of remedy companies. The best remedy on earth is plenty to do, plenty of sunshine, plenty of fresh air night and day, and a clear conscience.

I heartily indorse what friend Abbott has to say; and I regret to say that at present I do not recall any religious paper of large circulation that refuses to advertise medicines except the *Sunday School Times*; and, by the way, I do think the *Sunday School Times* is the best religious paper to put into the family of any thing on the face of the earth, not only because of the high moral tone of its advertising pages, but all through from beginning to end. If the religious papers of our land came anywhere near being as particular in regard to their advertisements as our prominent *agricultural* periodicals, we might rejoice. I do rejoice every day to see our agricultural editors present such clean and wholesome sheets for the homes of our rural population. They are exposing humbugs, pointing out frauds, and warning against intemperance and sabbath desecration, in a way that our religious periodicals *dare* not do while they permit such stuff as they do to fill their advertising col-

umns. Now, let all who love righteousness and hate iniquity make a vigorous protest. Tell your respective editors you can not permit their sheets to be read in the home unless they get on higher ground, especially in the matter of advertising.

WINTERGREENS — GROWING THEM IN THE GREENHOUSE, ETC.

To tell the truth, I have not had much success in the above enterprise that I wrote up early in the spring. I have had some success in growing them outdoors, but came pretty near failing in that also. Finally, at the suggestion of one of the good friends who sent me a lot of wintergreen-plants, I put them under some of the evergreens around our apiary, where there is quite a covering of what is usually called "pine needles." To my great surprise, here in the dense shade, and right among the roots of great thrifty evergreens, the wintergreens took hold and grew all right. But with the best kind of cultivation, in the sun and in the shade of our big brick house, they barely kept alive. I presume likely the wintergreens and wintergreen berries can be grown cheapest in their native wilds in Northern Michigan; and I hope the beautiful berries will soon be shipped to other localities that more people may enjoy the luscious fruit.



THE GINSENG BUSINESS.

As letters keep coming in, asking for particulars about the ginseng business, and if it is true that I have made a "great success" of it, etc., I shall have to say again, I have never had *any* "success" with it; and the reference in regard to the same by the ginseng men who have plants and seeds for sale are untrue and misleading. Look out for everybody who wants to sell you plants or seeds, or start you in the ginseng business. We clip the following from the *Practical Farmer*, of Philadelphia:

The Department of Agriculture advises that there has never been any success in the culture of ginseng, except in sections where the plant is found growing wild. But as the Chinese have decided that they do not want the cultivated roots of ginseng, of course the cultivation will soon come to an end, for the plant is perfectly useless except to sell to the Chinese, who imagine that it has medicinal value. Therefore it is about time to note the passing of the ginseng craze.

In addition to the above we are told by the papers that the recent Chinese boycott promises to wind up the trade in wild roots gathered in the woods.

Squab Book Free

 Squabs are raised in one month, bring Big PRICES. Eager market. Money-makers for poultrymen, farmers, women. Here's something WORTH LOOKING INTO. Send for our FREE BOOK, How to Make Money with Squabs, and learn this rich industry. Address: PLYMOUTH ROCK SQUAB CO., 320 Howard St., : MELROSE, MASS. 

FARMERS' BUREAU OF INFORMATION

In Charge of Crop Experts.

How to clean, separate, and grade grain and seed.

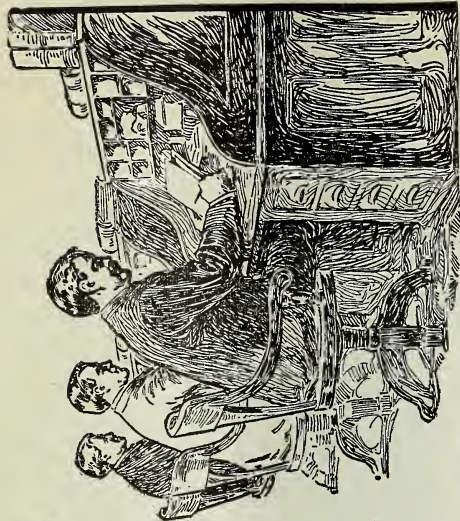
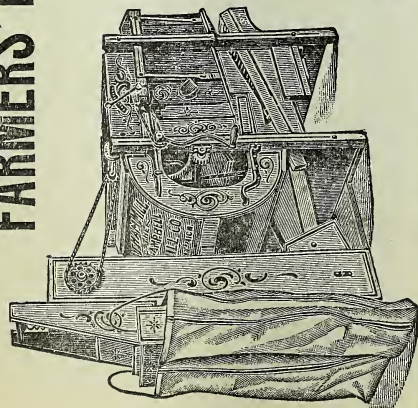
Advice on grain-breeding, planting and seeding.

How to overcome the weed nuisance.

How to raise a third to a half more crops on the same acreage.

How to handle and market your crops.

All Questions Promptly Answered by Men Who Know.



FREE

Our Bureau of Information is now fully organized with a Crop Expert in charge of each department, and its services are freely placed at the disposal of Farmers, Stockmen, Ranchmen, and Seedmen. This is the first Bureau of its kind ever equipped at private expense, and all information is furnished without one penny of charge. The Manson Campbell Company Ltd., were the pioneers in the "clean seed" movement, and their efforts along this line have aroused such widespread interest and accomplished so much good that they decided to establish a separate department for carrying on this important work.

The busy farmer can not take a course in an Agricultural College nor spare the time to dig up information from the mass of long-winded bulletins issued by the Department of Agriculture and the Experiment Stations. When he wants information, he wants it quickly, and boiled down to the simple facts, and it must be accurate—not mere theories, but proven practical information. Send on your inquiries and you will get useful, valuable help—the kind that will make your farming operations 100 per cent profitable. The Bureau was the natural outgrowth of our great manufacturing business. The success of the

CHATHAM FANNING-MILL

which is now in use on hundreds of thousands of farms throughout the United States and Canada and in every grain-growing country in the world, has been remarkable. Unquestionably its use has added millions of dollars to the country's wealth. Its work in cleaning, separating, and grading grain and seed has never been equalled. It was designed by experts who have made a life study of the many problems that it solves. The 17 screens and riddles with which it is regularly equipped are used in so many different combinations that the simple mention of its different uses makes a list of surprising length.

The invention of the new Oats-from-Wheat Riddle, and the new Corn-grading Attachment, both of which can be supplied with the Chatham Fanning-mill, was the crowning achievement of our experts. The Oats-from-Wheat Riddle is a wonderful piece of mechanism, containing 4500 parts, and gives an absolutely perfect separation, enabling growers to get succotash to realize the full measure of profit from this crop. The Corn-grader Attachment has been rigidly tested by the Iowa Agricultural College and its work pronounced 98 per cent perfect—the highest percentage ever reached in grading corn by mechanical means. The Chatham Fanning-mill, equipped with these two great inventions, is meeting with an enormous sale, and we have been compelled to enlarge our factory to meet the increased demand.

We have branch warehouses in twenty-four shipping-point centers, which gives our customers the advantage of prompt shipment. We sell on time or for cash, and PAY ALL FREIGHT. We want to make you a present of our interesting book, "How to Make Dollars out of Wind," and we also want you to make use of our Free Information Bureau. Be a 100 per cent Farmer! Learn how to banish the weed nuisance, and grade up your grain so as to raise banner crops and get top prices.

The Manson Campbell Co., Ltd.,

Manufacturers of Chatham Fanning-mills, Incubators and Brooders.

Wesson Ave., Detroit, Mich.

The Manson Campbell Co. Ltd. are thoroughly reliable. —Editor.